9 Public hospitals

Public hospitals are important providers of government funded health services in Australia. This chapter reports on the performance of State and Territory public hospitals, focussing on acute care services. It also reports separately on a significant component of the services provided by public hospitals — maternity services.

Public hospital systems are described in section 9.1. A framework of performance indicators and the key performance indicator results for public hospitals are outlined in section 9.2. Section 9.3 includes a profile of maternity services provided by public hospitals, along with a performance indicator framework and key results for public hospital maternity services. Future directions in reporting are discussed in section 9.4. Terms and definitions are summarised in section 9.5.

Significant improvements in the reporting of public hospitals in this Report are:

- a change to the performance framework to remove three indicators that did not adequately reflect the performance of public hospitals. The data for these indicators relate to hospital separations (that is, the number of admitted patients) and are now included in the descriptive section of the chapter (section 9.1)
- fetal, neonatal and perinatal death rates are now reported by Indigenous status.

Supporting tables

Supporting tables for chapter 9 are provided on the CD-ROM enclosed with the Report. The files are provided in Microsoft Excel format as \Publications\Reports\2005\Attach9A.xls and in Adobe PDF format as \Publications\Reports\2005\Attach9A.pdf.

Supporting tables are identified in references throughout this chapter by an 'A' suffix (for example, table 9A.3 is table 3 in the electronic files). These files can be found on the Review web page (www.pc.gov.au/gsp). Users without Internet access can contact the Secretariat to obtain these tables (see details on the inside front cover of the Report).

9.1 Profile of public hospital systems

Definition

A key objective of government is to provide public hospital services to ensure the population has access to cost-effective health services, based on clinical need and within clinically appropriate times, regardless of geographic location. Public hospitals provide a range of services, including:

- acute care services to admitted patients
- sub-acute and non-acute services to admitted patients (for example, rehabilitation or palliative care, or long stay maintenance care)
- emergency, outpatient and other services to non-admitted patients[1]
- mental health services, including services provided to admitted patients by designated psychiatric/psychogeriatric units
- public health services
- teaching and research activities.

This chapter focuses on acute care services provided to admitted patients and emergency services provided to non-admitted patients in public hospitals. These services comprise the bulk of public hospital activity and, in the case of acute care services to admitted patients, have the most reliable data available. Some data in the chapter include sub-acute and non-acute care services where they cannot yet be separately identified from acute care. In some instances, stand-alone psychiatric hospitals are also included, although their role is diminishing in accordance with the National Mental Health Strategy. Under the strategy, the provision of psychiatric treatment is shifting away from specialised psychiatric hospitals to mainstream public hospitals and the community sector. The performance of psychiatric hospitals and psychiatric units of public hospitals is examined more closely in 'Health management' (chapter 11). Some common health terms relating to hospitals are defined in box 9.1.

[1] Other services to non-admitted patients include community health services such as baby clinics and immunisation units, district nursing services and other outreach services (AIHW 2001a).

Box 9.1 **Some common terms relating to hospitals**

Patients

admitted patient: a patient who has undergone a formal admission process in a public hospital to begin an episode of care. Admitted patients may receive acute, sub-acute or non-acute care services.

non-admitted patient: a patient who has not undergone a formal admission process, but who may receive care through an emergency department, outpatient or other non-admitted service.

Types of care

Classification of care depends on the principal clinical intent of the care received.

acute care: clinical services provided to admitted or non-admitted patients, including managing labour, curing illness or treating injury, performing surgery, relieving symptoms and/or reducing the severity of illness or injury, and performing diagnostic and therapeutic procedures. Most episodes involve a relatively short hospital stay.

sub-acute and non-acute care: clinical services provided to patients suffering from chronic illnesses or recovering from such illnesses. Services include rehabilitation, planned geriatric care, palliative care, geriatric care evaluation and management, and services for nursing home patients. Clinical services delivered by designated psychogeriatric units, designated rehabilitation units and mothercraft services are considered non-acute.

Hospital outputs

separation: an episode of care that can be a total hospital stay (from admission to discharge, transfer or death) or a portion of a hospital stay beginning or ending in a change in the type of care for an admitted patient (for example, from acute care to rehabilitation). Admitted patients who receive same day procedures (for example, renal dialysis) are included in separation statistics.

casemix-adjusted separations: the number of separations adjusted to account for differences across hospitals in the complexity of their episodes of care. Casemix adjustment is an important step to achieving comparable measures of efficiency across hospitals and jurisdictions.

non-admitted occasions of service: clinical services provided by hospitals to non-admitted patients. Services may include emergency department visits, outpatient services (such as pathology, radiology and imaging, and allied health services, including speech therapy and family planning) and other services to non-admitted patients. Hospital non-admitted occasions of service are not yet recorded consistently across states and territories, and relative differences in the complexity of services provided are not yet documented.

(Continued on next page)

Box 9.1 **(Continued)**

Other common health terms

AR-DRG (Australian refined diagnosis related group): a patient classification system that hospitals use to match their patient services (hospital procedures and diagnoses) with their resource needs. AR-DRG versions 4.1 and 4.2 are based on the ICD-10-AM classification.

ICD-10-AM (the Australian modification of the International Standard Classification of Diseases and Related Health Problems): the current classification of diagnoses and procedures, replacing the earlier ICD-9-CM.

Source: DHAC (1998); NCCH (1998); NHDC (2001, 2003).

Funding

Total recurrent expenditure on public hospitals (excluding depreciation) was $18.3 billion in 2002-03 (table 9A.1).[2] In real terms, expenditure increased by 5.1 per cent between 2001-02 and 2002-03 (AIHW 2004a).

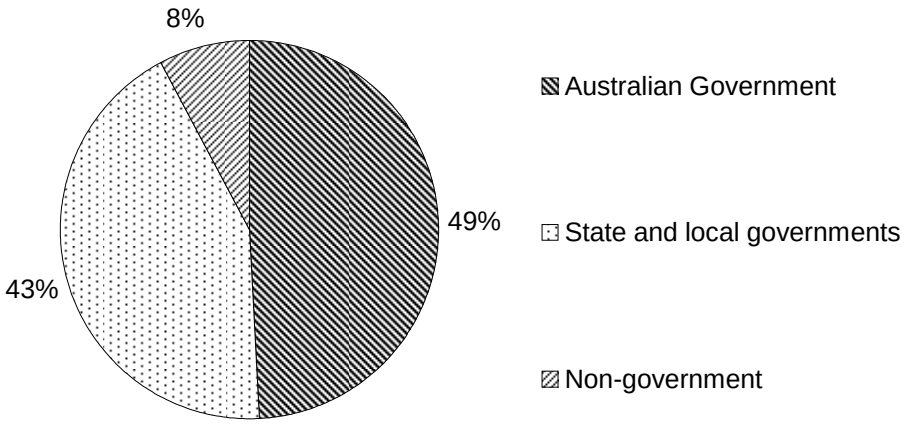
Funding for public hospitals comes from a number of sources. The Australian, State and Territory governments, health insurance funds, individuals, and workers compensation and compulsory motor vehicle third party insurance contribute to expenditure on public hospitals. Based on preliminary data, governments contributed about 92.1 per cent of funding for public (non-psychiatric) hospitals in 2002-03 (figure 9.1).[3] Public (non-psychiatric) hospitals accounted for 35.2 per cent of government recurrent expenditure on health services in 2002-03 (AIHW 2004b).

For selected public hospitals, recurrent expenditure on admitted patients (based on the inpatient fraction) in 2002-03 ranged from 70 per cent to 77 per cent of total recurrent expenditure across jurisdictions (AIHW 2004b). In 2002-03, government real recurrent expenditure on public hospitals (in 2001-02 dollars) was $895 per person for Australia, up from $791 in 1998-99. It ranged from $1165 per person in the NT to $712 per person in Queensland in 2002-03 (figure 9.2).

2 This figure includes spending on patient transport.

3 These expenditure data (figure 9.1) are from *Health Expenditure Australia* (AIHW 2004b). They are not directly comparable with the expenditure data drawn from *Australian Hospital Statistics* (AIHW 2004a). The data in *Health Expenditure Australia* have a broader scope and include some expenditures (such as those relating to blood transfusion services) that are not included in expenditure reported in *Australian Hospital Statistics* (AIHW unpublished).

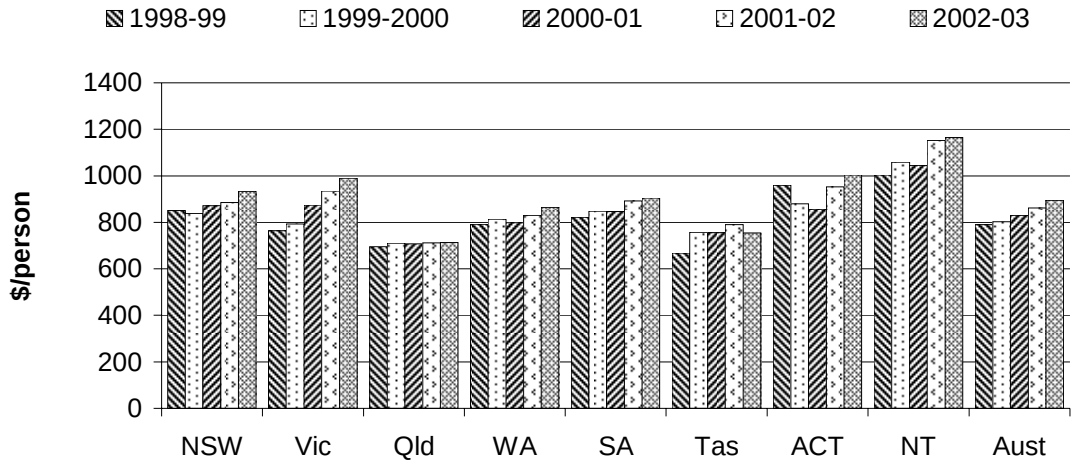
Figure 9.1 **Recurrent expenditure, public (non-psychiatric) hospitals, by source of funds, 2002-03[a]**



a Based on preliminary AIHW and Australian Bureau of Statistics (ABS) estimates.

Source: AIHW (2004b).

Figure 9.2 **Real recurrent expenditure per person, public hospitals (including psychiatric) (2001-02 dollars)[a, b, c]**

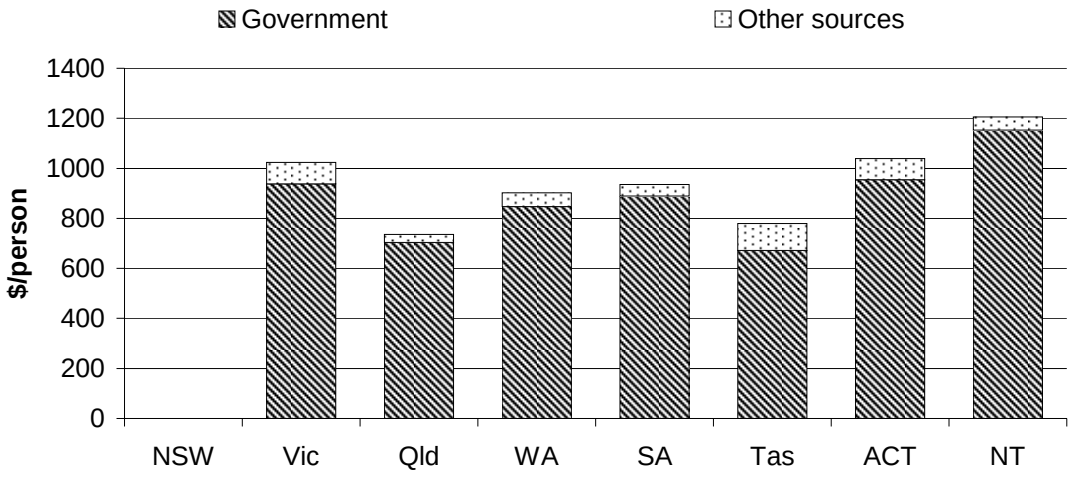


a Expenditure excludes depreciation and interest payments. **b** Data for 2002-03 for NSW are preliminary. NSW hospital expenditure recorded against special purposes and trust funds is excluded. NSW expenditure against primary and community care programs is included from 2000-01. **c** For 2001-02, Tasmanian data for two small hospitals are not supplied and data for one small hospital are incomplete. For 2000-01, data for six small Tasmanian hospitals are incomplete. For 2002-03, Tasmanian data for one small hospital were not supplied and data for five other small hospitals were incomplete.

Source: AIHW (2004a and various years); ABS (unpublished); tables 9A.2 and A.2.

In 2001-02, public hospitals (including psychiatric hospitals) received $1.5 billion in revenue from non-government sources[4] — an amount that accounted for 9.1 per cent of all recurrent expenditure (excluding depreciation). (More recent data are not yet available.) Total revenue in each jurisdiction comprised patient revenue (including income from private and compensable patients), recoveries (including fees from private practitioners treating private patients in public hospitals, staff meals and accommodation) and other revenue (investment income, charities and bequests). Some Australian Government health insurance subsidy payments are indirectly included in non-government revenue via health insurance payments received as part of patient revenue. The proportion of hospital revenue per person funded from non-government sources varied across jurisdictions in 2002-03 (figure 9.3).

Figure 9.3 **Source of public hospital revenue per person, 2002-03[a, b, c, d]**



a Expenditure excluding depreciation. **b** Includes psychiatric hospitals. **c** Non-government revenue for NSW and Australia were not available. **d** Revenue data for five small Tasmanian hospitals were not supplied.

Source: AIHW (2004a); ABS (unpublished); tables 9A.1, 9A.5 and A.2.

Size and scope of sector

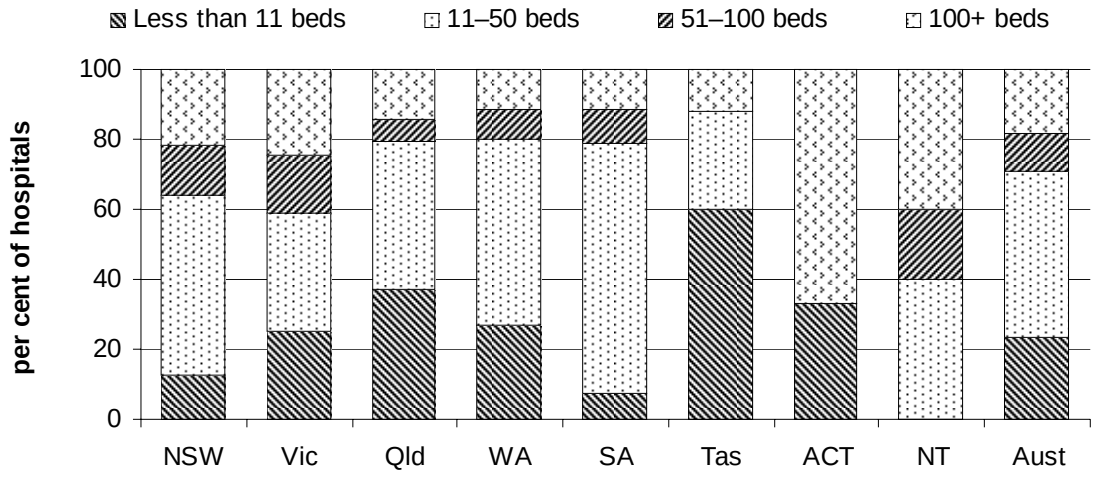
There are several ways to measure the size and scope of Australia's public hospital sector. This Review reports on: the number and size of hospitals; the number and location of public hospital beds; the number and types of public hospital separation; the number and types of separation by Indigenous status; the number of hospital staff; and the number and types of public hospital activity.

[4] Public hospital non-government revenue in 2001-02 for all states and territories except NSW.

Hospitals

In 2002-03, Australia had 748 public hospitals (including 19 psychiatric hospitals). Although 70.7 per cent of hospitals had 50 or fewer beds, these smaller hospitals represented only 18.6 per cent of total available beds (figure 9.4).

Figure 9.4 **Public hospitals, by size, 2002-03**[a, b, c, d]



[a] The number of hospitals reported can be affected by administrative and/or reporting arrangements and is not necessarily a measure of the number of hospital buildings or campuses. [b] Size is based on the average number of available beds. [c] The comparability of bed numbers can be affected by the casemix of hospitals including the extent to which hospitals provide same day admitted services and other specialised services. [d] The count of hospitals in Victoria is a count of the campuses that report data separately to the National Hospital Morbidity Database.

Source: AIHW (2004a); table 9A.3.

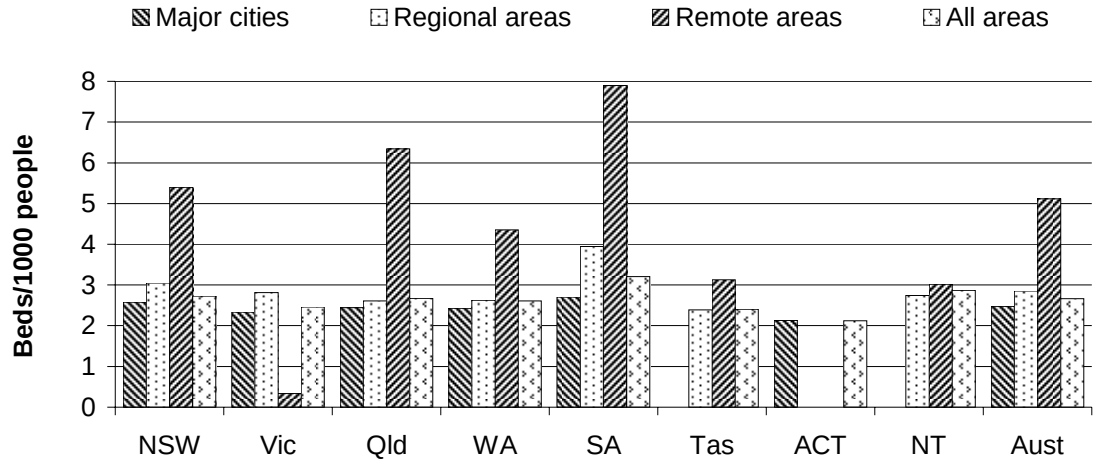
Beds

There were 52 200 available beds in public hospitals in 2002-03 (AIHW 2004a). The concept of an available bed, however, is becoming less important in the overall context of hospital activity, particularly in light of increasing same day hospitalisations and the provision of hospital-in-the-home care (AIHW 2003a). There are also differences in how available beds are counted, both across jurisdictions and over time.

On average, there were 2.7 beds per 1000 people in 2002-03 (figure 9.5). The rate was highest in SA (3.2) and lowest in the ACT (2.1). The comparability of bed numbers can be affected by the casemix of hospitals with, for example, different proportions of beds available for special or general purposes. Nationally, more beds were available per 1000 people in remote areas, although this finding does not indicate regional access to particular types of service or the distance required to travel to these services. These data need to be viewed in the context of the age and

sex structure (see appendix A) and the morbidity and mortality (see Health preface) of the population in each State and Territory.

Figure 9.5 **Available beds, public hospitals, by location, 2002-03[a, b, c]**



a An 'available bed' is one that is immediately available to be used by an admitted patient. A bed is immediately available for use if it is located in a suitable place for care, with nursing and auxiliary staff available within a reasonable period. Both occupied and unoccupied beds are included. Surgical tables, recovery trolleys, delivery beds, cots for normal neonates, emergency stretchers/beds not normally authorised or funded, and beds designated for same day non-admitted patient care are excluded. Beds in wards that were closed for any reason (except weekend closures for beds/wards staffed and available on weekends only) are also excluded (NHDC 2003). **b** The comparability of bed numbers can be affected by the casemix of hospitals including the extent to which hospitals provide same day admitted services and other specialised services. **c** Data need to be viewed in the context of the age and sex structure, morbidity and mortality of the population in each jurisdiction (see appendix A and the Health preface).

Source: AIHW (2004a); table 9A.6.

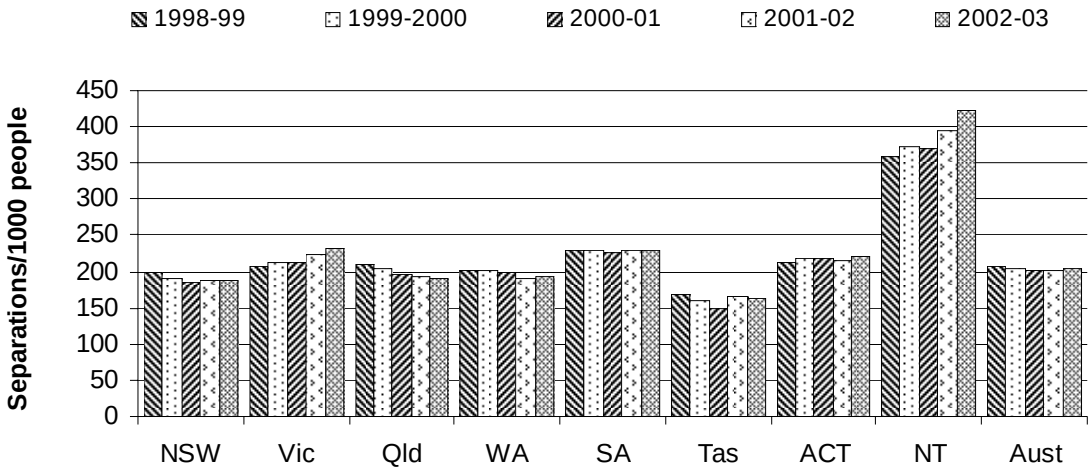
Total separation rates

There were approximately 4.0 million separations from public (non-psychiatric) hospitals in 2002-03 (table 9A.8). Nationally, this translates into 204.8 separations per 1000 people, ranging from 422.5 per 1000 in the NT to 163.9 per 1000 in Tasmania (figure 9.6).

Differences across jurisdictions in separation rates reflect variations in the health profiles of the people living in each State and Territory, the decisions made by medical staff about the type of care required and people's access to services other than public hospitals (for example, primary care and private hospitals). Variations in admission rates also reflect different practices in classifying patients as either admitted same day patients or outpatients. The extent of differences in classification practices can be inferred from the variation in the proportion of same day separations across jurisdictions. Jurisdictions that have a high proportion of same

day separations are likely to have a lower threshold for admitting patients, so will tend to have higher separation rates. This is particularly true of medical separations.

Figure 9.6 **Separation rates in public (non-psychiatric) hospitals[a, b]**



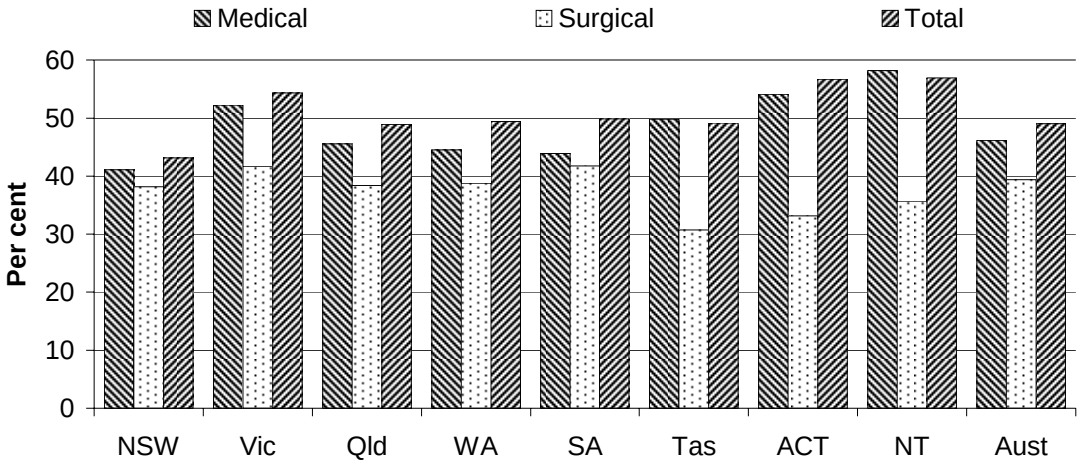
a Excludes separations for which the care type was reported as 'newborn with no qualified days' and records for hospital boarders and posthumous organ procurement. **b** Data are directly age standardised to the Australian population at 30 June 2001.

Source: AIHW (2004a and various years); table 9A.14.

The national proportion of medical separations that were same day was 46.2 per cent in 2002-03. The NT had the highest proportion of same day medical separations (58.2 per cent), while NSW had the lowest (41.1 per cent) (figure 9.7). Lower jurisdictional variation is likely in admission practices for surgical procedures, as reflected by the lower variability in the proportion of same day separations (figure 9.7).

Same day separations in public (non-psychiatric) hospitals increased by 5.9 per cent between 2001-02 and 2002-03, and the proportion of separations that were same day increased from 47.7 per cent to 49.0 per cent over this period. In contrast, overnight separations in public (non-psychiatric) hospitals remained virtually unchanged between 2001-02 and 2002-03 (table 9A.14).

Figure 9.7 **Proportion of medical, surgical and total separations that were same day, public (non-psychiatric) hospitals, 2002-03[a]**



a 'Total' includes medical, surgical, chemotherapy, radiotherapy and 'other' separations based on AR-DRG categories (see table 9A.15).

Source: AIHW (unpublished); table 9A.15.

Separation rates for Indigenous patients

Data on Indigenous people are limited by the accuracy and extent to which Indigenous people are identified in hospital records. Identification varies across states and territories. In 1998, a pilot study in 11 hospitals found that the accuracy with which a person's Indigenous status was recorded varied greatly from hospital to hospital, ranging from 55 per cent to 100 per cent (ATSIHWIU 1999). The quality of data improved from 2000-01 because all jurisdictions used consistent categories and definitions for Indigenous status from that year. Nevertheless, the quality of data for 2002-03 is considered acceptable only for SA, WA and the NT (AIHW 2004a). In addition, difficulties in estimating the size of the Indigenous population limit the comparability of data over time.

In 2002-03, separations for Indigenous people accounted for around 3.0 per cent of total separations in 2002-03 and 4.7 per cent of separations in public hospitals (table 9.1), but the Indigenous population made up only around 2.4 per cent of the total population. Most Indigenous separations (96 per cent) occurred in public hospitals. The low proportion of private hospital separations for Indigenous people may be due partly to a lower proportion of Indigenous patients being correctly identified in private hospitals and partly to this group's lower use of private hospitals. Data in table 9.1 need to be interpreted with care given that only data from WA, SA and the NT are considered to be of acceptable quality (AIHW 2004a).

Table 9.1 **Separations, by Indigenous status and hospital sector, 2002-03[a]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
Public hospital separations ('000)									
Indigenous [b]	37.9	9.2	51.7	37.2	13.1	1.8	1.4	41.9	194.3
Non-Indigenous	1245.3	1140.7	638.2	330.6	345.5	73.0	60.2	26.1	3859.6
Not reported	7.9	0.0	12.3	0.0	9.3	5.4	2.1	0.2	37.1
Total	**1291.2**	**1149.8**	**702.2**	**367.8**	**367.9**	**80.2**	**63.7**	**68.1**	**4091.0**
Private hospital separations ('000)									
Indigenous [b]	0.4	0.3	3.6	3.9	0.2	na	na	na	8.6
Non-Indigenous	707.6	650.8	465.0	276.7	207.3	na	na	na	2360.2
Not reported	1.0	0.0	133.5	0.0	4.3	na	na	na	194.0
Total	**709.0**	**651.1**	**602.2**	**280.6**	**211.7**	**na**	**na**	**na**	**2562.8**
Separations in public hospitals as a proportion of separations in all hospitals (%)									
Indigenous [b]	99	97	94	91	99	na	na	na	96
Non-Indigenous	64	64	58	54	63	na	na	na	62

a Excludes separations for which the care type was reported as 'newborn with no qualified days' and records for hospital boarders and posthumous organ procurement. **b** Identification of Indigenous patients is not considered complete and completeness varies across jurisdictions. The AIHW advised that only data from WA, SA and the NT are of acceptable quality. **na** Not available.

Source: AIHW (2004a); table 9A.21.

In 2002-03, on an age standardised basis, 657.2 separations (including same day separations) for Indigenous patients were reported per 1000 Indigenous people in public hospitals (tables 9.2 and 9A.22). This rate was markedly higher than the corresponding rate for the total population of 205.7 per 1000. Public hospital separation rates for Indigenous patients were highest in the NT (1223.3 per 1000 Indigenous people) (table 9.2). Incomplete identification of Indigenous people limits the validity of comparisons over time, as well as across jurisdictions.

Information about the conditions for which Indigenous people are hospitalised is presented in figures 9.8 and 9.9. These data do not signal the performance of hospitals, but reflect a range of factors, such as: the spectrum of public, primary care and post-hospital care available; Indigenous access to this care as well as hospital services; social and physical infrastructure services for Indigenous people; and differences in the complexity, incidence and prevalence of disease between the Indigenous and non-Indigenous populations.

Standardised hospital separation ratios are calculated by dividing Indigenous separations by expected separations. Expected separations are calculated as the product of the all Australian separation rates and the Indigenous population. They illustrate differences between the rates of Indigenous hospital admissions and those of the total Australian population, accounting for differences in age distributions. Ratios are presented for six major conditions: circulatory diseases, injury and poisoning, respiratory diseases and lung cancer, diabetes, tympanoplasty associated

with otitis media, and mental health conditions and selected associated ICD-9-CM and ICD-10-CM codes (tables 9A.23 and 9A.24).

Table 9.2 **Estimates of public hospital separations per 1000 people, by reported Indigenous status[a, b]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*[c]	*NT*	*Aust*
1998-99									
Indigenous	337.3	344.0	594.6	809.8	673.1	22.9	27.3	920.5	557.1
Total population	199.5	207.7	209.1	204.0	232.3	170.5	212.8	359.6	207.1
1999-2000									
Indigenous	363.4	413.1	708.3	868.9	875.5	132.2	1461.7	1105.0	652.4
Total population	192.1	211.7	205.0	202.0	232.6	160.1	219.2	372.9	204.6
2000-01									
Indigenous	403.8	461.4	671.6	852.2	772.6	110.6	858.0	1031.6	637.5
Total population	187.9	213.6	195.5	199.7	228.8	150.5	217.0	370.9	201.1
2001-02									
Indigenous	361.1	416.0	676.5	752.7	743.6	139.4	982.8	1129.6	614.3
Total population	188.6	222.5	192.5	190.7	229.7	165.0	216.3	394.3	202.8
2002-03									
Indigenous	406.7	476.0	685.2	809.4	788.1	173.1	1200.0	1223.3	657.2
Total population	190.2	231.3	189.4	195.4	231.0	164.5	219.7	422.5	205.7

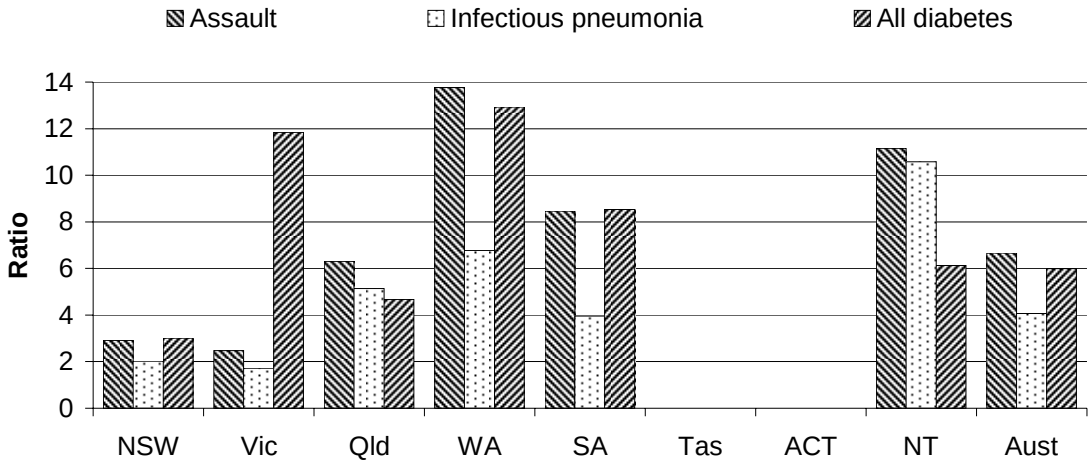
a The rates are directly age standardised to the Australian population at 30 June 2001. **b** Identification of Aboriginal and Torres Strait Islander patients is not considered complete and completeness varies across jurisdictions. The AIHW advised that only data from WA, SA and the NT are of acceptable quality. **c** Rates reported for Indigenous people in the ACT are subject to variability, given the small Indigenous population in the jurisdiction. A high proportion of separations were for maintenance renal dialysis episodes attributable to a small number of people.

Source: AIHW (unpublished); AIHW (2004a); table 9A.22.

In 2002-03, there was a marked difference between the separation rates for Indigenous males and those of all males for assault (separation rates for Indigenous males were 6.7 times higher than for all males), all diabetes[5] (separation rates for Indigenous males were 6.0 times higher than for all males), and infectious pneumonia (separation rates for Indigenous males were 4.1 times higher than for all males) (figure 9.8). While the 2002-03 standardised rates for rheumatic heart disease for Indigenous males also appeared to be markedly higher than for the total male population, the number of separations for Indigenous males with this condition was very small (table 9A.23).

5 'All diabetes' refers to separations with either a principal or additional diagnosis of diabetes.

Figure 9.8 **Ratio of age standardised hospital separation rates, Indigenous males to all males, by selected conditions, 2002-03[a, b, c, d, e]**



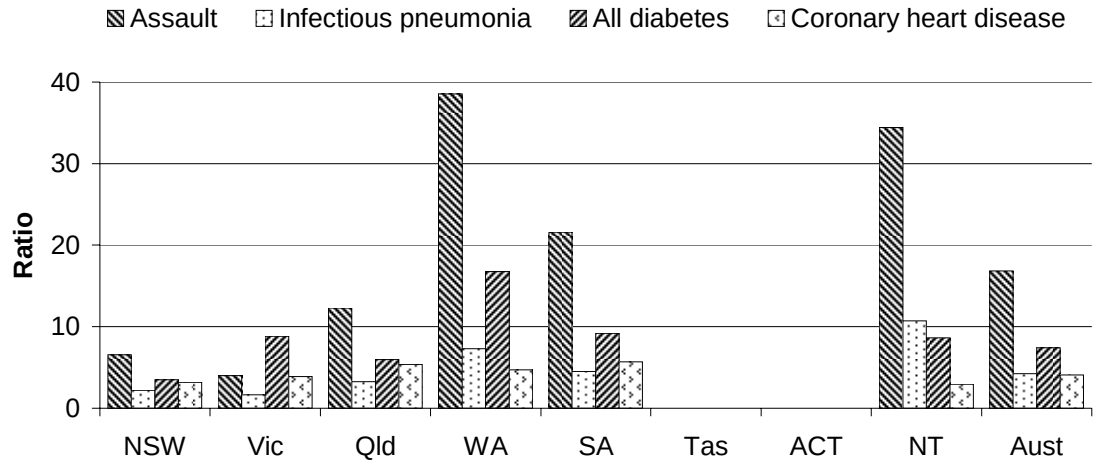
a The ratios are indirectly age standardised using the Census based estimated resident population of Indigenous males at 30 June 2001, the hospital separation rates for Australian males aged 0–74 years for 2000-01 and the male population at 30 June 2001. **b** Identification of Aboriginal and Torres Strait Islander patients is not considered to be complete and completeness varies among jurisdictions. The variation in the number of Indigenous separations per 1000 Indigenous population across the states and territories suggests variation in the proportion of Indigenous persons who were identified as such in the hospital morbidity data collections and/or in the total population. **c** Data for Tasmania and the ACT are not available, given the small size of the Indigenous population in those jurisdictions. **d** 'All diabetes' refers to separations with either a principal or additional diagnosis of diabetes. **e** These data do not signal the performance of hospitals, but reflect a range of factors such as: the spectrum of public, primary care and post-hospital care available; Indigenous access to this care as well as hospital services; social and physical infrastructure services for Indigenous people; and differences in the complexity, incidence and prevalence of disease between the Indigenous and non-Indigenous populations (see appendix A).

Source: AIHW (unpublished); table 9A.23.

In 2002-03, separation rates for Indigenous females were markedly higher than those for all females for: assault (16.8 times higher); all diabetes[6] (7.4 times higher); infectious pneumonia (4.3 times higher) and coronary heart disease (4.1 times higher) (figure 9.9). While the standardised rates for rheumatic heart disease, substance use disorder and tympanoplasty associated with otitis media for Indigenous females also appeared markedly higher than for all females, the number of separations for these conditions was very small (table 9A.24).

6 'All diabetes' refers to separations with either a principal or additional diagnosis of diabetes.

Figure 9.9 **Ratio of age standardised hospital separation rates, Indigenous females to all females, by selected conditions, 2002-03[a, b, c, d, e]**



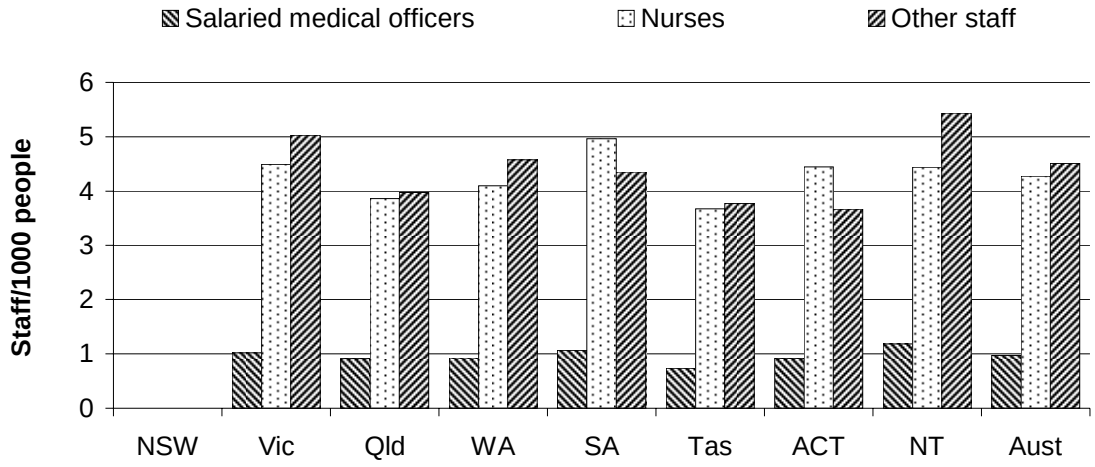
a The ratios are indirectly age standardised using the Census based estimated resident population of Indigenous males at 30 June 2001, the hospital separation rates for Australian males aged 0–74 years for 2000-01 and the male population at 30 June 2001. **b** Identification of Aboriginal and Torres Strait Islander patients is not considered to be complete and completeness varies among jurisdictions. The variation in the number of Indigenous separations per 1000 Indigenous population across the states and territories suggests variation in the proportion of Indigenous persons who were identified as such in the hospital morbidity data collections and/or in the total population. **c** Data for Tasmania and the ACT are not available, given the small size of the Indigenous population in those jurisdictions. **d** 'All diabetes' refers to separations with either a principal or additional diagnosis of diabetes. **e** These data do not signal the performance of hospitals, but reflect a range of factors such as: the spectrum of public, primary care and post-hospital care available; Indigenous access to this care as well as hospital services; social and physical infrastructure services for Indigenous people; and differences in the complexity, incidence and prevalence of disease between the Indigenous and non-Indigenous populations (see appendix A).

Source: AIHW (unpublished); table 9A.24.

Staff

Data for staff in NSW public hospitals in 2002-03 were not available for this Report. In those states and territories for which data were available for 2002-03, registered nurses comprised the single largest group of full time equivalent (FTE) staff employed in public hospitals (4.3 per 1000 people in Australia, excluding NSW). Excluding NSW, the NT had the most FTE staff per 1000 people (11.1) while Tasmania had the least (8.2) (figure 9.10). These data need to be viewed with care because they are affected by differences across jurisdictions in the recording and classifying of staff. The outsourcing of services with a large labour related component (for example, food services and domestic services) can have a large impact on hospital staffing figures. Differences in outsourcing may explain some of the differences in FTE staff in some staffing categories and across jurisdictions (AIHW 2004a).

Figure 9.10 **Average full time equivalent staff per 1000 people, public hospitals, 2002-03[a, b, c, d, e, f, g]**



'Other staff' include diagnostic and allied health professionals, other personal care staff, administrative and clerical staff, and domestic and other staff. **a** Where average FTE staff numbers were not available, staff numbers at 30 June 2003 were used. Staff contracted to provide products (rather than labour) are not included. Staff per 1000 people are calculated from ABS population data at 31 December 2002 (table A.2). **b** Data for NSW were not available for this Report. **c** For Victoria, FTEs may be slightly understated. **d** For Queensland, pathology services are provided by staff employed by the State pathology service and are not reported here. **e** Other personal care staff for WA excludes staff on retention who do not work regular hours. **f** Data for two small Tasmanian hospitals were not supplied. **g** Data for Australia excludes NSW hospital staff and population.

Source: AIHW (2004a); table 9A.7; table A.2.

Activity — admitted patient care

There were around 4.1 million acute, sub-acute and non-acute separations in public hospitals in 2002-03 (table 9A.8). Of these, acute separations accounted for 95.6 per cent, newborns with some qualified days accounted for 1.1 per cent and rehabilitation care accounted for 1.7 per cent (table 9A.9).[7] (Palliative care, non-acute care and other care made up the residual.) Public psychiatric hospitals accounted for around 0.4 per cent of total separations in public hospitals in 2002-03. Of the total number of separations in public (non-psychiatric) hospitals, 49.0 per cent were for same day patients (table 9A.8).

Table 9.3 shows the 10 AR-DRGs with the highest number of overnight acute separations in public hospitals for 2002-03. These 10 AR-DRGs accounted for 16.1 per cent of all overnight acute separations.

[7] All babies born in hospital are admitted patients, but only qualified days for newborns are included in the patient day count under the Australian Health Care Agreements.

Table 9.3 **Ten AR-DRGs with the most overnight acute separations, public hospitals, 2002-03[a, b, c]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
Separations for AR-DRGs as a proportion of all overnight acute separations (%)									
Vaginal delivery w/o cd	4.7	4.5	5.3	4.1	3.3	4.4	6.1	1.3	4.6
Chest pain	2.0	1.7	2.2	1.2	1.7	1.0	0.9	1.6	1.8
Oesophagitis, gastroenteritis and miscellaneous digestive system disorders, age >9 years, w/o cat/sev cc	1.9	1.6	1.7	1.8	1.7	1.5	1.1	0.8	1.7
Cellulitis age >59 years, w/o cat/sev cc	1.2	1.2	1.6	1.5	1.0	0.9	1.4	4.4	1.3
Respiratory infection/ inflammations w/o cc	1.4	1.1	1.2	1.3	0.9	1.0	1.4	2.1	1.2
Caesarean delivery w/o cd	1.1	1.3	1.5	1.1	1.0	1.1	1.3	1.3	1.2
Other antenatal admission with moderate or no cd	1.3	1.0	1.1	1.0	0.9	0.9	1.1	1.6	1.1
Chronic obstructive airway disease w/o cat or sev cc	1.3	0.9	1.0	0.9	0.9	1.1	0.7	1.1	1.1
Bronchitis and asthma age <50 w/o cc	1.1	0.9	0.9	1.2	1.3	0.7	0.8	0.9	1.1
Heart failure and shock w/o cat cc	1.1	1.0	1.1	1.0	1.1	1.0	0.8	0.6	1.1
Ten AR-DRGs with the most overnight acute separations (%)	**17.1**	**15.0**	**17.5**	**15.2**	**13.7**	**13.5**	**15.6**	**15.8**	**16.1**
Total overnight acute separations ('000)	700	493	343	179	175	39	26	29	1 985

cat = catastrophic. cc = complications and co-morbidities. cd = complicating diagnosis. sev = severe. w/o = without. [a] Separations for which the type of episode of care was reported as 'acute' or 'newborn with qualified patient days', or was not reported. [b] Totals may not add as a result of rounding. [c] Excludes same day separations.

Source: AIHW (2004a); table 9A.10.

Table 9.4 lists the 10 AR-DRGs that accounted for the most patient days (17.8 per cent of all patient days recorded) in 2002-03. Schizophrenic disorders associated with involuntary mental health legal status accounted for the largest number of patient days, followed by vaginal delivery without complicating diagnosis.

Table 9.4 **Ten AR-DRGs with the most patient days, public hospitals, 2002-03[a]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Total*
Patient days for AR-DRGs as a proportion of all patient days (%)									
Schizophrenia disorders with involuntary mental health legal status	2.8	3.5	3.8	3.3	3.7	2.1	1.4	1.0	3.2
Vaginal delivery w/o cd	2.5	2.4	2.6	2.4	1.8	2.6	2.8	3.0	2.4
Tracheostomy any age, any condition	2.1	2.3	2.1	2.2	2.6	2.1	1.9	2.6	2.2
Major affective disorders age<70 w/o cat or sev cc	1.9	2.0	2.3	3.2	2.7	2.5	2.9	1.4	2.2
Schizophrenia disorders w/o involuntary mental health legal status	1.6	1.6	1.3	1.8	1.2	3.2	0.9	1.6	1.6
Chronic obstructive airways disease with cat or sev cc	1.5	1.6	1.5	1.7	1.6	1.8	0.8	1.5	1.5
Stroke with sev or cd/procedure	1.2	1.5	1.0	1.4	1.5	1.7	1.2	0.5	1.3
Dementia and other chronic disturbances of cf	1.0	1.3	0.8	1.2	2.3	1.9	0.4	0.1	1.2
Heart failure and shock w/o cat cc	1.3	1.0	1.2	1.0	1.2	1.2	0.9	0.5	1.2
Chronic obstructive airways disease w/o cat or sev cc	1.3	0.8	1.1	1.0	0.9	1.5	0.6	1.0	1.1
Ten AR-DRGs with the most patient days (%)	**17.3**	**18.0**	**17.7**	**19.1**	**19.3**	**20.6**	**13.8**	**13.1**	**17.8**
Total patient days ('000)	3 944	2 709	1 707	982	979	253	158	158	10 890

cat = catastrophic. cc = complications and co-morbidities. cd = complicating diagnosis. cf = cerebral function. sev = severe. w/o = without. [a] Separations for which the type of episode of care was reported as 'acute' or 'newborn with qualified patient days', or was not reported. Excludes same day separations.

Source: AIHW (unpublished); table 9A.11.

Activity — non-admitted patient services

There is no agreed classification system for services to non-admitted patients, so activity is difficult to measure and cannot be compared across jurisdictions. As well as differences in the way in which data are collected, differing admission practices will lead to variation in the services reported across jurisdictions. In addition, states and territories may differ in the extent to which these types of service are provided in non-hospital settings (such as community health centres) (AIHW 2003a). Differences in the complexity of the occasion of service are also not taken into account — for example, a simple urine glucose test is treated equally with a complete biochemical analysis of all body fluids (AIHW 2001a).

A total of 40.7 million individual occasions of service were provided to non-admitted patients in public hospitals in 2002-03 (table 9.5). In addition, public

hospitals also delivered 406 301 group sessions during this time (where a group session is defined as a service provided to two or more patients, excluding services provided to two or more family members) (table 9A.12). In public hospitals in 2002-03, accident and emergency services comprised 14.2 per cent of all occasions of service to non-admitted patients. Other medical, surgical and obstetric services, pathology services and allied health were the most common types of outpatient care (table 9.5).

Table 9.5 **Ten most common types of individual non-admitted patient care, public hospitals, 2002-03[a]**

	NSW[b]	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*[c]	*Aust*[d]
Occasions of service for the most common types of non-admitted patient care as a proportion of all occasions of service for non-admitted patients (%)									
Accident and emergency	11.8	17.7	13.8	13.4	21.4	12.5	23.4	26.5	14.2
Outpatient services									
Other medical/surgical/ obstetric	22.7	20.2	25.6	12.9	38.3	29.1	45.8	24.2	23.1
Pathology	15.2	9.6	27.2	15.7	na	24.3	8.1	19.9	16.2
Allied health	8.7	14.2	6.3	20.1	10.6	12.7	2.0	3.7	10.4
Radiology and organ imaging	4.7	8.5	8.4	7.9	11.6	8.8	14.8	19.2	7.2
Pharmacy	5.0	5.2	8.1	3.7	..	7.2	0.1	6.6	5.3
Mental health	3.6	11.0	0.9	0.7	0.9	0.2	1.4	..	3.7
Dental	3.9	2.1	4.5	0.2	0.3	0.2	..	..	3.0
Other non-admitted services									
Community health	12.0	6.3	2.4	17.9	..	0.2	0.1	..	8.4
District nursing	5.2	4.7	0.7	4.3	..	..	..	..	3.6
Ten most common types of non-admitted patient care (%)	**92.7**	**99.6**	**98.0**	**96.9**	**83.0**	**95.4**	**95.6**	**100.0**	**95.1**
Total occasions of service for non-admitted patients ('000)	16 826	7 118	8 843	4 252	2 209	770	411	356	40 786

a Individual non-admitted patient care services. Excludes group sessions. Reporting arrangements varied significantly across years and across jurisdictions. **b** Data for NSW are preliminary. **c** Radiology figures for the NT are underestimated and pathology figures relate to only three of the five hospitals. **d** Includes only those states and territories for which data are available. **..** Not applicable.

Source: AIHW (2004a); table 9A.12.

9.2 Public hospitals

Framework of performance indicators

The performance indicator framework is based on the shared government objectives for public hospitals (box 9.2). The performance indicator framework shows which data are comparable in the 2005 Report (figure 9.11). For data that are not considered directly comparable, the text includes relevant caveats and supporting

commentary. Chapter 1 discusses data comparability from a Report-wide perspective. The 'Health preface' explains the performance indicator framework for health services as a whole, including the subdimensions of quality and sustainability that have been added to the standard Review framework for health services.

Box 9.2 **Objectives for public hospitals**

The common government objectives for public hospitals are to provide cost-effective acute and specialist services that are:

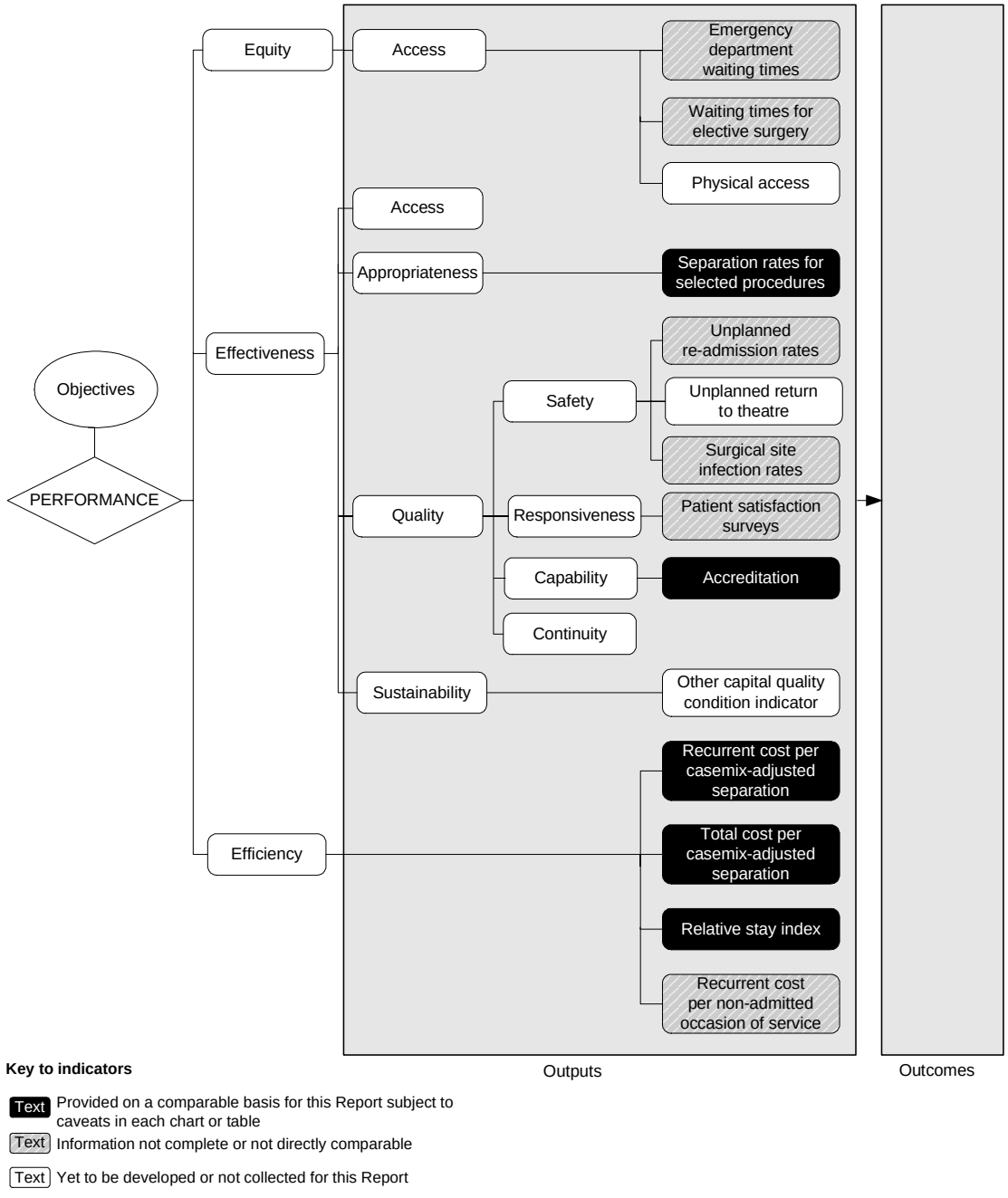
- safe and of high quality
- responsive to individual needs
- accessible
- equitably and efficiently delivered.

This year, the performance framework for public hospitals has been revised to exclude three previous indicators — 'total separation rates', 'separation rates by target group' and 'labour cost per casemix-adjusted separation'. These three data items are now included in the profile of this chapter as contextual information.

- 'Total separation rates' were previously reported as an indicator of appropriateness, with the intention of reflecting tendencies to overservice or underservice public hospital patients. As an indicator, however, these data were difficult to interpret. First, there is no agreed benchmark for 'appropriate' separation rates — high separation rates can indicate, for example, overservicing or better access. Second, variations in separation rates reflect different practices in classifying patients as either admitted same day patients or outpatients. Third, comparisons are complicated by different access to substitutable health services (such as private hospitals or community care). Last, 'total separation rates' do not reflect differences in casemix across jurisdictions.
- 'Separation rates by target group' were included in the public hospitals framework as an indicator of equity of access, comparing separation rates for Indigenous people with those for all Australians. These data have been removed as an indicator because separation rates by Indigenous status do not reflect the performance of public hospitals, but of the health system more generally in addressing the complexity, incidence and prevalence of disease amongst Indigenous Australians. Differences between hospital separation rates for Indigenous and non-Indigenous people highlight differences between the health profiles of the two populations, differences in their access to the range of health services available (primary and community health services, and hospitals), and differences in aspects of their environmental health (see Health preface).

- ‘Labour cost per casemix-adjusted separation’ was previously included in the public hospitals framework as an indicator of efficiency. As an indicator, however, labour costs are only partial in nature, representing a subset of total costs. Labour costs are retained as a data item in the chapter, but recurrent costs and total costs per casemix-adjusted separation are more useful indicators.

Figure 9.11 **Performance indicators for public hospitals**



Key performance indicator results

Different delivery contexts, locations and types of client may affect the equity, effectiveness and efficiency of health services. Appendix A of the Report contains statistical profiles on each State and Territory, which may assist in interpreting the performance indicators presented in this chapter.

As discussed in section 9.1, public hospitals provide a range of services to admitted patients, including some non-acute services such as rehabilitation and palliative care. The extent to which these non-acute treatments can be identified and excluded as desired from the analysis of some data differs across jurisdictions. Similarly, psychiatric treatments are transferred to public (non-psychiatric) hospitals at different rates across jurisdictions.

Outputs — equity

Equity indicators measure how well a service is meeting the needs of certain groups in society (see chapter 1). Public hospitals have a significant influence on the equity of the overall healthcare system. While access to public hospital services is important to the community in general, it is particularly so for people of low socioeconomic status and others, who may have difficulty in accessing alternative services, such as those provided by private hospitals.

Access

Two indicators of equity of access to public hospitals are presented in this Report: 'emergency department waiting times' (box 9.3) and 'elective surgery waiting times' (box 9.4). Separation rates for Indigenous people are discussed in the profile of this chapter (see section 9.1).

Emergency department waiting times

There is some variation in how public hospital 'emergency department waiting times' are calculated across jurisdictions, which may slightly affect the comparability of the data. Victoria, Queensland, WA and the ACT use the national definition (box 9.3). The NT uses the time of registration as the starting point, while NSW, SA and Tasmania use the time of triage. In SA, patients are always triaged before being clerically registered (AIHW 2004a). There may also be differences in the precision with which the starting time of treatment is recorded. There are also differences in data coverage across jurisdictions, with the estimated proportion of

emergency visits covered ranging from 100 per cent in the ACT and the NT, to 57 per cent in Victoria in 2002-03 (table 9.6).

Box 9.3 **Emergency department waiting times**

'Emergency department waiting times' measure the proportion of patients seen within the benchmarks set according to the urgency of treatment required.

The nationally agreed definition for measuring waiting times is to subtract the time at which the patient presents at the emergency department (that is, the time at which the patient is clerically registered or triaged[8], whichever occurs earlier) from the time of commencement of service by a treating medical officer or nurse. Patients who do not wait for care after being triaged or clerically registered are excluded from the data.

The benchmarks set according to triage category, are as follows:

- triage category 1: need for resuscitation — patients seen immediately
- triage category 2: emergency — patients seen within 10 minutes
- triage category 3: urgent — patients seen within 30 minutes
- triage category 4: semi-urgent — patients seen within 60 minutes
- triage category 5: non-urgent — patients seen within 120 minutes (NHDC 2003).

It is desirable that a high proportion of patients are seen within the benchmarks set for each triage category. Non-urgent patients who wait longer are likely to suffer discomfort and inconvenience, and more urgent patients may experience poor health outcomes as a result of extended waits.

Data may vary across jurisdictions as a result of differences in clinical practices (for example, the allocation of cases to urgency categories). The proportion of patients in each triage category who were subsequently admitted may indicate the comparability of triage categorisations across jurisdictions and thus the comparability of the waiting times data (table 9A.17).

For triage category 1, NSW, Victoria, the ACT and the NT had the highest proportion of patients seen within the triage timeframe in 2002-03 (100 per cent) and Tasmania had the lowest proportion (91 per cent). For triage category 2, Victoria had the highest proportion of patients seen within the relevant timeframe (84 per cent) and Tasmania had the lowest (55 per cent). Victoria and NSW generally had a higher than average proportion of emergency department patients who were subsequently admitted (table 9A.17). The proportion of patients in each category who were subsequently admitted may indicate the comparability of the triage categorisation.

[8]The triage category indicates the urgency of the patient's need for medical and nursing care.

Table 9.6 **Emergency department patients seen within triage category timeframes, public hospitals (per cent), 2002-03[a]**

Triage category	*NSW*[b]	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
1 — Resuscitation	100	100	99	94	99	91	100	100	99
2 — Emergency	77	84	73	73	65	55	82	60	75
3 — Urgent	57	76	55	64	47	61	74	64	61
4 — Semi-urgent	62	65	55	68	49	59	67	58	61
5 — Non-urgent	86	85	80	87	84	90	79	88	85
Total	**65**	**73**	**60**	**73**	**53**	**64**	**74**	**65**	**66**
Data coverage: estimated proportion of emergency visits[c]	73	57	64	96	75	84	100	100	71

a Care needs to be taken in interpreting these data. Nationally agreed definitions exist, but there may be differences in how data are collected. Data may vary across jurisdictions as a result of differences in clinical practices. **b** Emergency department occasions of service data for NSW are preliminary so the estimated proportion of emergency visits covered is preliminary. **c** The ratio of the number of occasions of service for hospitals reporting to the emergency department waiting times collection divided by the accident and emergency occasions of service reported to the National Public Hospitals Establishments Database as part of the non-admitted patient data collection.

Source: AIHW (2004a); table 9A.17.

Waiting times for elective surgery

The Steering Committee has identified 'waiting times for elective surgery' as an indicator of equity of access in public hospitals (box 9.4). Two measures of this indicator are reported. Data were not available from all jurisdictions for all measures of this indicator in this Report.

The two measures of 'waiting times for elective surgery' are affected by variations across jurisdictions in the method used to calculate waiting times for patients who:

- changed clinical urgency category while on the waiting list
- transferred from a waiting list managed by one hospital to a waiting list managed by a different hospital (AIHW 2004a).

For patients who changed clinical urgency category, all jurisdictions except SA counted the period in the most recent urgency category plus any time waited in more urgent categories. SA counted the total waiting time in all urgency categories. This approach has the effect of increasing the apparent waiting time for admissions in SA compared with other jurisdictions where patients are on a list of lower urgency category.

Box 9.4 **Waiting times for elective surgery**

'Waiting times for elective surgery' is an indicator of access to hospital services. Two measures are reported here:

- 'overall elective surgery waiting times'
- 'elective surgery waiting times by clinical urgency category'.

'Overall elective surgery waiting times' are calculated by comparing the date on which patients are added to a waiting list with the date on which they are admitted. Days on which the patient was not ready for care are excluded. 'Overall waiting times' is presented as the number of days within which 50 per cent of patients are admitted and the number of days within which 90 per cent of patients are admitted. The proportion of patients who waited more than one year is also shown.

'Elective surgery waiting times by clinical urgency category' shows the proportion of patients who wait longer than the clinically desirable time before being admitted. Reporting of 'elective surgery waiting times by clinical urgency category' shows both the time waited for surgery by patients on waiting lists at particular census dates, as well as the time waited to admission. Public hospital census data reflect the proportion of patients waiting on the date of the census who had been waiting an extended period. Census data do not represent the completed waiting time of patients. The three generally accepted urgency categories for elective surgery are:

- category 1 — admission is desirable within 30 days
- category 2 — admission is desirable within 90 days
- category 3 — admission at some time in the future is acceptable.

There is no specified or agreed desirable wait for category 3 patients, but the term 'extended wait' is used for patients waiting longer than 12 months for elective surgery, as well as for category 1 and 2 patients waiting more than the agreed desirable waiting times of 30 days and 90 days respectively.

Patients on waiting lists who were not subsequently admitted to hospital are excluded from both measures. Patients may be removed from waiting lists because they are admitted as emergency patients for the relevant procedure, no longer need the surgery, die, are treated at another location, decline to have the surgery, or cannot be contacted by the hospital (AIHW 2004a). In 2002-03, 14.0 per cent of patients were removed from waiting lists for reasons other than admission (AIHW 2004a).

'Elective surgery waiting times by clinical urgency category' cannot be compared across jurisdictions because there are systematic differences in the assignment of patients to urgency categories. This measure has the advantage, however, of aligning with the objective of providing hospital services within a clinically desirable period.

For patients who were transferred from a waiting list managed by one hospital to that managed by another, the time waited on the first list may not be included in the waiting time reported (AIHW 2004a). NSW, Queensland, WA and the ACT

reported the total time waited on all waiting lists. This approach may have the effect of increasing the apparent waiting times for admissions in these jurisdictions compared with other jurisdictions. SA has stated that patients do not commonly switch between waiting lists managed by different hospitals in SA (AIHW 2004a).

Table 9.7 presents data for 'overall waiting times' — the number of days within which 50 per cent (that is, the 50th percentile) and 90 per cent (the 90th percentile) of patients are admitted. In 2002-03, the days waited at the 50th percentile ranged from 48 days in the ACT to 21 days in Queensland. The days waited at the 90th percentile ranged from 389 in Tasmania to 113 in Queensland. The proportion of patients waiting more than 365 days ranged from 10.9 per cent in Tasmania to 2.6 per cent in Queensland (table 9.7).

Table 9.7 **Elective surgery waiting times, public hospitals, 2002-03**

	unit	*NSW*	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
Number of days waited at:										
50th percentile	no.	29	28	21	27	34	42	48	45	28
90th percentile	no.	227	197	113	207	181	389	300	305	197
Proportion who waited more than 365 days	%	4.2	4.2	2.6	3.9	3.0	10.9	7.1	7.0	4.0
Estimated coverage of elective surgery separations[a]	%	100	71	96	77	64	100	100	100	85

[a] The number of separations with urgency of admission reported as elective and a surgical procedure for public hospitals reporting to the National Elective Surgery Waiting Times Data Collection as a proportion of the number of separations with an elective urgency of admission and a surgical procedure for all public hospitals.

Source: AIHW (2004a); table 9A.18.

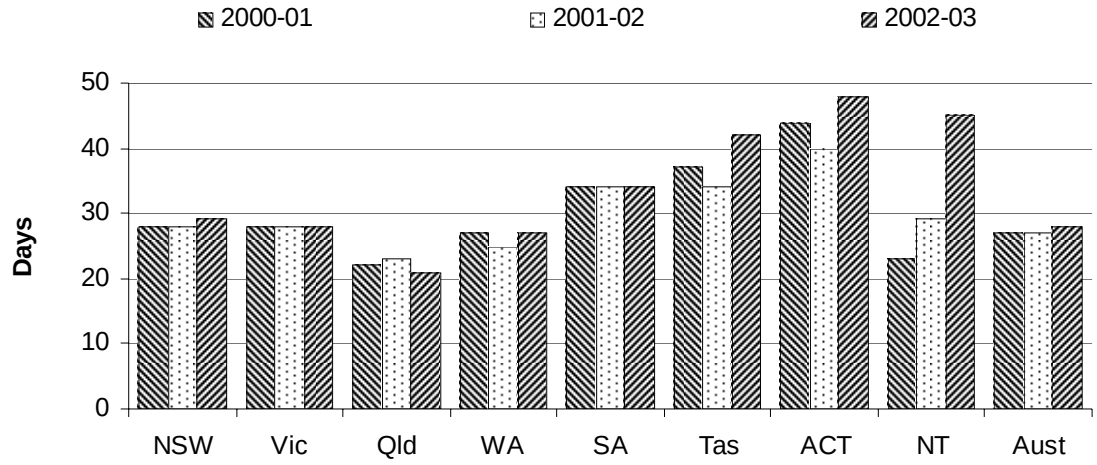
Nationally, 27 days were waited at 50th percentile in 2000-01 and 2001-02 and 28 days in 2002-03. There were variations among jurisdictions, with waiting times increasing in NSW, Tasmania, ACT and NT (figure 9.12).

Attachment 9A includes more information on 'elective surgery waiting times'. Data on 'elective surgery waiting times' by hospital peer group, specialty of surgeon and indicator procedure are contained in tables 9A.18, 9A.19 and 9A.20 respectively.

'Elective surgery waiting times by urgency category' are not comparable across jurisdictions because clinicians have systematically different approaches to categorisation by urgency. Figures 5.12 and 5.13 of the 2002 Report illustrate differences across jurisdictions in the classification of patients to urgency categories for 1999. States and territories with large proportions of patients in category 1 were also the states and territories that had relatively large proportions of patients 'not seen on time'. The apparent variation in performance is thus related to the

classification practices employed (SCRCSSP 2002). Jurisdictional differences in the classification of patients by urgency category in 2002-03 are shown in table 9.8.

Figure 9.12 **Days waited for elective surgery by the 50th percentile, public hospitals**



Source: AIHW (2002c, 2002a, 2003a, 2004a); table 9A.18.

Table 9.8 **Classification of patients, by clinical urgency category, 2002-03 (per cent)**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*
Patients on waiting lists								
Category 1	na	2.0	6.4	na	7.9	na	2.9	4.8
Category 2	na	38.2	29.9	na	17.2	na	41.8	30.5
Category 3	na	59.8	63.6	na	74.9	na	55.3	64.7
Total[a]	na	100.0	100.0	na	100.0	na	100.0	100.0
Patients admitted from waiting lists								
Category 1	na	20.5	37.6	na	33.0	na	32.8	33.6
Category 2	na	45.6	43.3	na	22.0	na	39.8	35.3
Category 3	na	33.9	19.1	na	45.0	na	27.5	31.1
Total[a]	na	100.0	100.0	na	100.0	na	100.0	100.0

a Totals may not add to 100 per cent due to rounding. **na** not available.

Source: State and Territory governments (unpublished).

For this Report, Victoria, Queensland, SA, the ACT and the NT supplied 'elective surgery waiting times data by clinical urgency category'. (For more information on 'elective surgery waiting times by urgency category', see DHA 2004b.) For jurisdictions that provided data for this Report:

- Public hospital census data for Victoria at 30 June 2003 suggest that no category 1 patients on the waiting list were subject to extended waits, as were

39.1 per cent of category 2 patients, 27.1 per cent of category 3 patients and 31.1 per cent of all patients. Of patients admitted to hospital from waiting lists in 2002-03, no category 1 patients were subject to extended waits. 22.6 per cent of category 2 patients, 8.8 per cent of category 3 patients and 12.4 per cent of all patients were subject to extended waits (table 9A.64).

- Public hospital census data for Queensland at 1 July 2003 suggest that 2.3 per cent of category 1 patients on the waiting list were subject to extended waits, as were 5.3 per cent of category 2 patients, 38.2 per cent of category 3 patients and 26.0 per cent of all patients. Of patients admitted to hospital from waiting lists in 2002-03, 9.3 per cent of category 1 patients were subject to extended waits, as were 11.8 per cent of category 2 patients, 13.0 per cent of category 3 patients and 11.1 per cent of all patients (table 9A.70).
- Public hospital census data for SA at 30 June 2003 suggest that 17.0 per cent of category 1 patients on the waiting list were subject to extended waits, as were 22.1 per cent of category 2 patients, 18.3 per cent of category 3 patients and 18.8 per cent of all patients. Of patients admitted to hospital from waiting lists in 2002-03, 13.5 per cent of category 1 patients were subject to extended waits, as were 15.6 per cent of category two patients, 4.9 per cent of category 3 patients and 10.1 per cent of all patients (table 9A.78).
- Public hospital census data for the ACT at 30 June 2003 suggest that 0.4 per cent of category 1 patients on the waiting list were subject to extended waits, as were 56.3 per cent of category 2 patients, 43.3 per cent of category 3 patients and 41.5 per cent of all patients. Of patients admitted from waiting lists in 2002-03, 10.8 per cent of category 1 patients were subject to extended waits, as were 70.8 per cent of category 2 patients, 18.4 per cent of category 3 patients and 26.7 per cent of all patients (table 9A.85).
- Public hospital census data for the NT at 30 June 2003 suggest that 57.8 per cent of category 1 patients on the waiting list were subject to extended waits, as were 52.0 per cent of category 2 patients, 26.5 per cent of category 3 patients and 35.8 per cent of all patients. Of patients admitted from waiting lists in 2002-03, 14.5 per cent of category 1 patients were subject to extended waits, as were 24.0 per cent of category 2 patients, 14.6 per cent of category 3 patients and 17.9 per cent of all patients (table 9A.87).

Victoria, Queensland, SA, the ACT and the NT also provided data on waiting times by clinical specialty and urgency category for 2002-03 (tables 9A.65, 9A.71, 9A.79, 9A.88 and 9A.90).

Physical access

The Steering Committee has identified 'physical access to public hospitals' as an indicator of the equity of access to public hospitals for development in future reports (box 9.5).

Box 9.5 **Physical access**

An indicator of physical access to public hospitals is yet to be developed.

Outputs — effectiveness

Access

The Steering Committee has identified access to public hospitals as an area for development in future reports (box 9.6).

Box 9.6 **Access effectiveness**

An indicator of the effectiveness of access to public hospitals is yet to be developed.

Appropriateness

Separation rates for selected procedures

The Steering Committee has identified 'separation rates for selected procedures' as an indicator of the appropriateness of public hospital services (box 9.7).

The 'separation rates for selected procedures' reported here include all hospitals and reflect the activities of both public and private health systems.[9] The most common procedures in 2002-03 were endoscopies, lens insertions, arthroscopic procedures and caesarean sections (table 9.9). For all procedures, separation rates varied across jurisdictions. Separation rates were frequently below the national average in the ACT and the NT. Statistically significant and material differences in the separation

[9] Data include public acute, public psychiatric, private acute, private psychiatric and private free-standing day hospital facilities. Some private hospitals are not included, resulting in under-reporting of some procedures, particularly procedures more likely to be performed in private hospitals. These types of procedure are thus undercounted for some jurisdictions (AIHW 2002a).

rates for these procedures may highlight variations in treatment methods across jurisdictions. Table 9A.16 presents standardised separation rate ratios — comparing the separation rate in each jurisdiction with the national rate — along with confidence intervals for each ratio.

Box 9.7 **Separation rates for selected procedures**

The purpose of this indicator is to help determine whether 'hospital separation rates for selected procedures' are appropriate. The procedures are selected for their frequency, for being elective and discretionary, and because alternative treatments are sometimes available.

'Separation rates for selected procedures' are defined as separations per 1000 people for certain procedures and for caesarean section separations per 100 in-hospital births.

Higher/lower rates are not necessarily associated with inappropriate care. Large jurisdictional variations in rates for particular procedures, however, may require investigation to determine whether underservicing or overservicing is occurring.

Care needs to be taken when interpreting the differences in the 'separation rates of the selected procedures'. Variations in rates may be attributable to variations in the prevalence of the conditions being treated, or to differences in clinical practice across states and territories. Higher rates may be acceptable for certain conditions and not for others. Higher rates of angioplasties and lens insertions, for example, may represent appropriate levels of care, whereas higher rates of hysterectomies or tonsillectomies may represent an over-reliance on procedures. No clear inference can be drawn from higher rates of arthroscopies or endoscopies. Some of the selected procedures, such as angioplasty and coronary artery bypass graft, are alternative treatment options for people diagnosed with similar conditions.

Table 9.9 **Separations per 1000 people, all hospitals, by selected procedure or diagnosis, 2002-03[a, b, c, d]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Total*[e]
Procedure/diagnosis									
Appendectomy	1.2	1.3	1.5	1.6	1.3	1.4	1.2	1.5	1.3
Coronary artery bypass	0.8	0.8	0.8	0.5	0.7	0.7	0.5	0.7	0.8
Coronary angioplasty	1.3	1.6	1.1	1.3	1.2	1.2	0.9	1.1	1.3
Caesarean section:									
separation rate	3.4	3.4	4.0	3.7	3.6	3.0	2.9	4.1	3.5
separations per 100 in-hospital births[f]	30.2	28.1	30.3	30.1	29.5	22.9	24.8	27.2	29.3
Cholecystectomy	2.2	2.3	2.4	2.2	2.4	2.2	1.7	2.0	2.3
Diagnostic gastrointestinal endoscopy	26.0	32.1	31.9	27.3	25.1	19.8	13.6	21.0	28.3
Hip replacement	1.3	1.5	1.1	1.5	1.4	1.8	1.4	0.7	1.3
Revision of hip replacement	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.2
Hysterectomy[g]	1.4	1.4	1.5	1.9	1.7	1.8	1.4	1.3	1.5
Lens insertion	7.7	6.9	8.0	8.3	7.0	5.6	6.7	7.7	7.5
Tonsillectomy	1.6	1.8	1.6	1.9	2.2	0.9	1.2	0.7	1.7
Myringotomy	1.3	2.0	1.4	2.3	2.9	1.1	1.3	0.7	1.7
Knee replacement	1.5	1.1	1.2	1.4	1.4	1.2	1.5	0.8	1.3
Prostatectomy	1.1	1.4	1.0	1.2	1.1	1.3	0.9	1.2	1.2
Arthroscopic procedures[h]	4.9	5.9	4.4	7.1	8.3	5.1	4.3	6.9	5.5

a Excludes separations for which the care type was reported as 'newborn with no qualified days' and records for hospital boarders and posthumous organ procurement. **b** The procedures and diagnoses are defined using ICD-10-AM codes. **b** Some private hospitals are not included. **c** Rate per 1000 population was directly age standardised to the Australian population at 30 June 2001 using December 2001 population estimates as divisors. **d** Separations exclude multiple procedures/diagnoses for the same separation within the same group. **e** Includes other territories. Excludes non-residents and unknown State or Territory of residence. **F** Caesarean sections divided by separations for which in-hospital birth was reported. This is an approximate measure of the proportion of all births that are by caesarean section because births out of hospital are not included. **g** Females aged 15–69 years. **h** Includes arthroscopies.

Source: AIHW (2004a); table 9A.16.

Quality

There is no single definition of quality in healthcare, but the Institute of Medicine in the United States defines quality as 'the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge' (Lohr and Shroeder 1990). No single indicator can measure quality across all providers. An alternative strategy is to identify and report on *aspects* of quality of care. The aspects of quality recognised in the performance indicator framework are safety, responsiveness capability and continuity. Data are reported against all of these except continuity.

There has been considerable debate and research to develop suitable indicators of the quality of healthcare both in Australia and overseas. The Steering Committee reports data on clinical indicators of safety ('unplanned re-admission rates' and 'surgical site infection rates'), patient satisfaction and the accreditation of public hospital beds. More information on the Steering Committee's proposals for improving reporting on quality for public hospitals are outlined in section 9.4.

Various states and territories publicly report performance indicators for public hospital quality. Some have adopted the same indicators as reported here. In NSW for example, reporting of Australian Council on Health Care Standards (ACHS) 'surgical site infection rates' is mandatory for public hospitals (box 9.11). Both the WA and Tasmanian health department annual reports include information on 'unplanned re-admission rates'. All Victorian hospitals are required to publish annual quality care reports that include safety and quality indicators for infection control, medication errors, falls monitoring and prevention, and pressure wound monitoring and prevention. Currently, Victoria is the only State that publicly reports sentinel events (see section 9.4). All Australian health ministers agreed to the establishment of the Australian Council for Safety and Quality in Health Care in January 2000, with a view to taking a systematic approach to assessing and improving the quality of healthcare.

Safety

Improving patient safety is an important issue for all hospitals. Studies on medical errors have indicated that adverse healthcare related events occur in public hospitals in Australia and internationally, and that their incidence is potentially high (for example, Brennan *et al.* 1991; Wilson *et al.* 1995; Thomas *et al.* 2000; and Davis *et al.* 2001). These adverse events can result in serious consequences for individual patients, and the associated costs can be considerable (Kohn *et al*., 1999).

Data for the 'safety' indicators come from the ACHS Comparative Report Service (Clinical Indicators). The ACHS data are collected for internal clinical review by individual hospitals. They are predominantly used to demonstrate the potential for improvement across Australian hospitals, if all hospitals could achieve the same outcomes as the hospitals that achieve the best outcomes for patients. When interpreting results of these indicators, emphasis needs to be given to the potential for improvement. Statewide conclusions cannot be drawn because participation in the Comparative Report Service (Clinical Indicators) is voluntary, so the data are not necessarily drawn from representative samples of hospitals (box 9.8).

Box 9.8 **Reporting of ACHS clinical indicators**

The data for the clinical indicators of 'unplanned re-admissions to hospital' and 'surgical site infection rates' come from the ACHS. The ACHS's method for reporting clinical indicators is explained in *Determining the Potential to Improve Quality of Care* (ACHS 2003). The ACHS reports the average (that is, mean) rate of occurrence of an event and the performance of hospitals at the 20th and 80th centiles — that is, the rate at (or below) which the top 20 per cent and 80 per cent of hospitals are performing. This method is designed to allow hospitals to determine whether their performance is above or below average, and what scope may exist for improvement.

Particular attention is paid to systematic variation between hospitals and between different categories of hospital (including different jurisdictions), and to individual hospitals that vary significantly from the average for all hospitals (that is, outliers).

The ACHS calculates the average occurrence of an event for all hospitals and uses the shrinkage estimation method to estimate shrunken rates for individual hospitals. From these shrunken rates, the performance of hospitals at the 20th and 80th centiles is calculated. The potential gains from shifting (shrunken) 'mean' hospitals to the 20th centile are obtained by calculating the change in the occurrence of the event measured if the mean were equal to performance at the 20th centile.

Shrunken rates are used rather than actual rates because actual rates of 0 per cent and 100 per cent may be obtained for individual hospitals based on random variation where there are low denominators. Shrinkage estimators adjust each hospital's observed rate using the hospital's numerator and denominator, together with the mean and standard deviations of other hospitals to obtained corrected rates. The smaller the denominator for an individual hospital, the larger is the shift to the overall mean.

Using the shrunken rates, mean rates are calculated for individual categories of hospital (including jurisdictions) to determine stratum rates. If the stratum explains more than 10 per cent of the variation in rates, this is reported as a possible explanatory variable. The potential gains of each category shifting performance to the stratum with the lowest mean are also calculated.

Finally, using the shrunken rates for individual hospitals, the observed occurrence of the event measured is compared to the expected occurrence of the event to measure difference from the mean. To avoid responding to random variation, three standard deviations are plotted, and values outside the three standard deviations are assumed to be systematically different from the average rate. The potential gains from shifting the performance of these outliers to the performance of mean hospitals are calculated (outlier gains).

Source: ACHS (unpublished, 2003).

Unplanned re-admission rates

'Unplanned re-admission rates' are reported as an indicator of hospital safety (box 9.9). These estimates should be viewed in the context of the statistical (standard) errors. High standard errors signal that data are particularly unreliable. The statistical terms used to describe this indicator are explained in box 9.10.

Box 9.9 **Unplanned re-admission rates**

'Unplanned re-admission rates' show the rate at which patients unexpectedly return to hospital within 28 days for further treatment of the same condition or a condition related to the initial admission.

The aim is to measure unintentional additional hospital care. Patients might be re-admitted unexpectedly if the initial care or treatment was ineffective or unsatisfactory, if post discharge planning was inadequate, or for other reasons outside the control of the hospital, for example poor post-discharge care.

The 'unplanned re-admission rate' is the total number of unplanned and unexpected re-admissions within 28 days of separation as a percentage of the total number of separations (excluding patient deaths) (see section 9.5). High rates for this indicator suggest the quality of care provided by hospitals, or post-discharge care or planning, should be examined because there may be scope for improvement.

There are some difficulties in identifying re-admissions that were unplanned. A re-admission is considered unplanned if there is no documentation to verify that the re-admission was planned and if the re-admission occurred through the accident and emergency department of a hospital.

This indicator identifies only those patients re-admitted to the same hospital, so there is some under-reporting (for example, where patients go to another hospital instead). Unplanned re-admission rates are not adjusted for casemix or patient risk factors, which may vary across hospitals and across jurisdictions.

Box 9.10 **Definition of terms for ACHS clinical indicators**

centile: value separating one 100th parts of a distribution in order of size. The 20th centile of hospitals for the unplanned re-admissions indicator would represent the best performing 20 per cent of hospitals (with the lowest number of re-admissions); the 20th centile of hospitals for the infections indicators would represent the best performing 20 per cent of hospitals (with the lowest number of infections).

centile gains: the potential gains from shifting mean hospitals to the performance at the 20th centile, obtained by calculating the change in the occurrence of an event if the mean were equal to performance at the 20th centile.

(Continued on next page)

Box 9.10 **(Continued)**

denominator: the term of a fraction or equation showing the number of parts into which the numerator is being divided (usually written below the line). For the unplanned re-admissions indicator, the denominator is the total number of admissions in the participating hospital; for the infections indicators, the denominator is the total number of separations in the participating hospital.

rate (mean): the sum of a set of numbers divided by the amount of numbers in the set, often referred to as an average.

numerator: the term of a fraction or equation showing how many parts of the fraction are taken (usually written above the line). For the unplanned re-admissions indicator, the numerator is the total number of unplanned re-admissions in the participating hospital; for the infections indicators, the numerator is the number of infections for the selected procedure in the participating hospital.

outlier gains: the potential gains from moving the performance of outlier hospitals to the performance of mean hospitals, obtained by calculating the change in the occurrence of an event if the outlier performance were equal to performance at the mean.

stratum gains: the potential gains from a particular category of hospitals moving to the performance of the stratum with the lowest mean.

stratum rate: mean rates for a particular jurisdiction.

Source: ACHS (2001).

New South Wales

Among those NSW public hospitals participating in the ACHS Comparative Report Service in 2003, the mean rate of 'unplanned re-admissions' was 3.6 per 100 admissions (subject to a standard error of 0.2). The ACHS estimated that if the performance of all NSW public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 2.7 per cent fewer re-admissions to NSW public hospitals (table 9.10). The terms in table 9.10 are defined in box 9.10.

Table 9.10 **Unplanned re-admissions per 100 admissions, public hospitals, NSW, 2003[a]**

Hospitals	*Reports*	*Numerator (re-admissions)*	*Denominator (separations)*	*Rate*	*Standard error* (±)
57	88	15 426	433 906	3.6	0.2

National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (re-admissions)*	*Change represented by potential gains (%)*	*Potential outlier gains (re-admissions)*	*Potential stratum gains (re-admissions)*
4.7	0.9	11 695	2.7	4 665	12 401

a Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.56.

Victoria

Among those Victorian public hospitals participating in the ACHS Comparative Report Service in 2003, the mean rate of 'unplanned re-admissions' was 2.8 per 100 admissions (subject to a standard error of 0.3). The ACHS estimated that if the performance of all Victorian public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 1.9 per cent fewer re-admissions to Victorian public hospitals (table 9.11). The terms in table 9.11 are defined in box 9.10.

Table 9.11 **Unplanned re-admissions per 100 admissions, public hospitals, Victoria, 2003[a]**

Hospitals	*Reports*	*Numerator (re-admissions)*	*Denominator (separations)*	*Rate*	*Standard error* (±)
36	60	6 022	217 702	2.8	0.3

National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (re-admissions)*	*Change represented by potential gains (%)*	*Potential outlier gains (re-admissions)*	*Potential stratum gains (re-admissions)*
4.7	0.9	4 150	1.9	1 107	4 504

a Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.61.

Queensland

Among those Queensland public hospitals participating in the ACHS Comparative Report Service in 2003, the mean rate of 'unplanned re-admissions' was 4.0 per 100 admissions (subject to a standard error of 0.4). The ACHS estimated that if the performance of all Queensland public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 3.1 per cent fewer re-admissions to Queensland public hospitals (table 9.12). The terms in table 9.12 are defined in box 9.10.

Table 9.12 **Unplanned re-admissions per 100 admissions, public hospitals, Queensland, 2003[a]**

Hospitals	*Reports*	*Numerator (re-admissions)*	*Denominator (separations)*	*Rate*	*Standard error* (±)
11	20	4 998	125 108	4.0	0.4
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (re-admissions)*	*Change represented by potential gains (%)*	*Potential outlier gains (re-admissions)*	*Potential stratum gains (re-admissions)*
4.7	0.9	3 922	3.1	1 440	4 126

a Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.67.

Western Australia

Among those WA public hospitals participating in the ACHS Comparative Report Service in 2003, the mean rate of 'unplanned re-admissions' was 1.7 per 100 admissions (subject to a standard error of 0.4). The ACHS estimated that if the performance of all WA public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.8 per cent fewer re-admissions to WA public hospitals (table 9.13). The terms in table 9.13 are defined in box 9.10.

Table 9.13 **Unplanned re-admissions per 100 admissions, public hospitals, WA, 2003[a]**

Hospitals	*Reports*	*Numerator (re-admissions)*	*Denominator (separations)*	*Rate*	*Standard error* (±)
13	20	1 955	115 103	1.7	0.4
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (re-admissions)*	*Change represented by potential gains (%)*	*Potential outlier gains (re-admissions)*	*Potential stratum gains (re-admissions)*
4.7	0.9	965	0.8	217	1 152

a Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.72.

South Australia

Among those SA public hospitals participating in the ACHS Comparative Report Service in 2003, the mean rate of 'unplanned re-admissions' was 4.9 per 100 admissions (subject to a standard error of 0.6). The ACHS estimated that if the performance of all SA public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 4.1 per cent fewer re-admissions to SA public hospitals (table 9.14). The terms in table 9.14 are defined in box 9.10.

Table 9.14 **Unplanned re-admissions per 100 admissions, public hospitals, SA, 2003[a]**

Hospitals	*Reports*	*Numerator (re-admissions)*	*Denominator (separations)*	*Rate*	*Standard error* (±)
10	15	2 397	48 505	4.9	0.6
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (re-admissions)*	*Change represented by potential gains (%)*	*Potential outlier gains (re-admissions)*	*Potential stratum gains (re-admissions)*
4.7	0.9	1 980	4.1	987	2 059

a Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.76.

Australia

Data for Tasmania, the ACT and the NT are not reported separately because fewer than five hospitals reported 'unplanned re-admissions' to the ACHS Comparative

Report Service in each of those jurisdictions in 2003. Nationally, among all public hospitals participating in the ACHS Comparative Report Service in 2003, the mean rate of 'unplanned re-admissions' was 3.1 per 100 admissions. The ACHS estimated that if the performance of all Australian public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 2.2 per cent (or 23 714) fewer re-admissions (ACHS unpublished).

Surgical site infection rates

Data for 'surgical site infections rates', like the 'unplanned re-admissions' data, are collected for internal clinical review by individual hospitals. 'Surgical site infection rates' are reported for four frequently performed procedures — hip prosthesis, knee prosthesis, lower segment caesarean section and abdominal hysterectomy. Statewide conclusions cannot be drawn from the data because healthcare organisations contribute to the ACHS on a voluntary basis and the data are not necessarily drawn from representative samples. These estimates should be viewed in the context of the statistical (standard) errors. High standard errors signal that the data may be particularly unreliable (box 9.11).

Box 9.11 **Surgical site infection rates**

'Surgical site infection rates' are included as an indicator because they can result in serious consequences for individual patients, place a significant burden on the health system and are influenced by the safety of hospital practices and procedures.

This indicator is calculated as the average (that is, mean) rate of post-operative in-hospital occurrence of surgical site infection rates for selected surgical procedures (see section 9.5). Rates are reported for hip and knee prosthesis, lower segment caesarean section and abdominal hysterectomy. Low 'surgical site infection rates' are consistent with the quality standards required in the public hospital sector.

Reporting by procedure reduces the potential for casemix to influence the rates of infection, but some cases are more susceptible to infection than others. Reporting is also affected by the time period during which infections are recorded — for example, some surgical infections do not present until after discharge from hospital. Surgical infection rates are not reported for each procedure where fewer than five hospitals are included in the data.

New South Wales

Among those NSW public hospitals participating in the ACHS Comparative Report Service in 2003, the mean 'surgical site infection rate' for hip prosthesis was 1.4 per 100 procedures (subject to a standard error of 0.2). The performance of all NSW

public hospitals was similar to that of the top 20 per cent of public hospitals nationally (table 9.15).

The mean 'surgical site infection rate' for knee prosthesis was 0.5 per 100 procedures (subject to a standard error of 0.2). The performance of all NSW public hospitals was slightly better than that of the top 20 per cent of public hospitals nationally (table 9.15).

The mean 'surgical site infection rate' for lower segment caesarean section was 0.6 per 100 procedures (subject to a standard error of 0.4). The ACHS estimated that if the performance of all NSW public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.2 per cent fewer infections in that State following lower segment caesarean sections (table 9.15). NSW data for hysterectomy procedures in 2003 are not published due to the low number of hospitals reporting this data item to the ACHS (less than five).

Table 9.15 **Surgical site infections, public hospitals, by selected surgical procedure, NSW, 2003[a]**

	Unit	*Hip prosthesis*	*Knee prosthesis*	*Lower segment caesarean section*	*Abdominal hysterectomy*
Hospitals	no.	9	10	9	np
Infection rate	%	1.4	0.5	0.6	np
Standard error (±)		0.2	0.2	0.4	np
National performance at 80th centile	rate	2.3	1.1	1.9	np
National performance at 20th centile	rate	1.4	0.7	0.4	np
Potential centile gains	no.	–	-1.0	4.0	np
Change represented by potential gains	%	-0.2	-0.2	0.2	np
Potential outlier gains	no.	–	–	–	np
Potential stratum gains	no.	11.0	4.0	–	np

a Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction. **np** Not published. – Nil or rounded to zero.

Source: ACHS (unpublished); table 9A.57.

Victoria

Among those Victorian public hospitals participating in the ACHS Comparative Report Service in 2003, the mean 'surgical site infection rate' for hip prosthesis was 2.6 per 100 procedures (subject to a standard error of 0.1). The ACHS estimated that if the performance of all Victorian public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 1.2 per cent fewer infections in that State following hip prosthesis surgery (table 9.16).

The mean 'surgical site infection rate' for knee prosthesis was 2.4 per 100 procedures (subject to a standard error of 0.2). The ACHS estimated that if the performance of all Victorian public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 1.7 per cent fewer infections in that State following knee prosthesis surgery (table 9.16).

The mean 'surgical site infection rate' for lower segment caesarean section was 2.8 per 100 procedures (subject to a standard error of 0.8). The ACHS estimated that if the performance of all Victorian public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 2.4 per cent fewer infections in that State following lower segment caesarean sections (table 9.16).

The mean 'surgical site infection rate' for abdominal hysterectomy was 2.1 per 100 procedures (subject to a standard error of 0.2). The ACHS estimated that if the performance of all Victorian public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.3 per cent fewer infections in that State following abdominal hysterectomies (table 9.16).

Table 9.16 **Surgical site infections, public hospitals, by selected surgical procedure, Victoria, 2003[a]**

	Unit	*Hip prosthesis*	*Knee prosthesis*	*Lower segment caesarean section*	*Abdominal hysterectomy*
Hospitals	no.	8	8	6	6
Infection rate	%	2.6	2.4	2.8	2.1
Standard error (±)		0.1	0.2	0.7	0.2
National performance at 80th centile	rate	2.3	1.1	1.9	2.5
National performance at 20th centile	rate	1.4	0.7	0.4	1.8
Potential centile gains	no.	13.0	19.0	11.3	–
Change represented by potential gains	%	1.2	1.7	2.4	0.3
Potential outlier gains	no.	–	7.2	–	–
Potential stratum gains	no.	29.0	26.0	10.0	1.0

a Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction. – Nil or rounded to zero.

Source: ACHS (unpublished); table 9A.62.

Queensland

Among those Queensland public hospitals participating in the ACHS Comparative Report Service in 2003, the mean 'surgical site infection rate' for hip prosthesis was 1.1 per 100 procedures (subject to a standard error of 0.1). The performance of all

Queensland public hospitals was slightly better than that of the top 20 per cent of public hospitals nationally (table 9.17).

The mean 'surgical site infection rate' for knee prosthesis was 0.6 per 100 procedures (subject to a standard error of 0.1). The performance of all Queensland public hospitals was similar to that of the top 20 per cent of public hospitals nationally (table 9.17).

The mean 'surgical site infection rate' for lower segment caesarean section was 1.0 per 100 procedures (subject to a standard error of 0.2). The ACHS estimated that if the performance of all Queensland public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.6 per cent fewer infections in that State following lower segment caesarean sections (table 9.17).

The mean 'surgical site infection rate' for abdominal hysterectomy was 3.1 per 100 procedures (subject to a standard error of 0.1). The ACHS estimated that if the performance of all Queensland public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 1.3 per cent fewer infections in that State following abdominal hysterectomies (table 9.17).

Table 9.17 **Surgical site infections, public hospitals, by selected surgical procedure, Queensland, 2003[a]**

	Unit	*Hip prosthesis*	*Knee prosthesis*	*Lower segment caesarean section*	*Abdominal hysterectomy*
Hospitals	no.	10	10	8	5
Infection rate	%	1.1	0.6	1.0	3.1
Standard error (±)		0.1	0.1	0.2	0.1
National performance at 80th centile	rate	2.3	1.1	1.9	2.5
National performance at 20th centile	rate	1.4	0.7	0.4	1.8
Potential centile gains	no.	-5.0	-1.0	28.0	5.0
Change represented by potential gains	%	-0.3	-0.1	0.6	1.3
Potential outlier gains	no.	0.0	0.0	9.9	–
Potential stratum gains	no.	16.0	8.0	18.0	7.0

a Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction. – Nil or rounded to zero.

Source: ACHS (unpublished); table 9A.68.

Australia

'Surgical site infection rates' for WA, SA, Tasmania, the ACT and the NT are not reported separately because fewer that five hospitals participated in the ACHS

Comparative Report Service. Nationally, among all public hospitals participating in the ACHS Comparative Report Service in 2003, the mean 'surgical site infection rate' for hip prosthesis surgery was 1.8 per 100 separations. The ACHS estimated that if the performance of all Australian public hospitals matched the performance of the top 20 per cent of public hospitals, there would be 0.4 per cent fewer infections following hip prosthesis surgery.

The mean 'surgical site infection rate' following knee prosthesis surgery was 1.1 per 100 separations. The ACHS estimated that if the performance of all Australian public hospitals matched the performance of the top 20 per cent of public hospitals, there would be 0.5 per cent fewer infections following knee prosthesis surgery.

The mean 'surgical site infection rate' following lower segment caesarean section surgery was 1.2 per 100 separations. The ACHS estimated that if the performance of all Australian public hospitals matched the performance of the top 20 per cent of public hospitals, there would be 0.8 per cent fewer infections following lower segment caesarean section surgery.

The mean 'surgical site infection' rate following abdominal hysterectomy surgery was 2.1 per 100 separations. The ACHS estimated that if the performance of all Australian public hospitals matched the performance of the top 20 per cent of public hospitals, there would be 0.3 per cent fewer infections following abdominal hysterectomy surgery (ACHS unpublished).

Responsiveness

Patient satisfaction surveys

The Steering Committee has identified the use of 'patient satisfaction surveys' as an indicator of responsiveness in public hospitals (box 9.12).

Table 9.18 lists the editions of this Report for which patient satisfaction data was reported for each State and Territory.

Box 9.12 **Patient satisfaction surveys**

'Patient satisfaction surveys' assist in assessing the performance of hospitals in their delivery of clinical and non-clinical services. They can be particularly useful for obtaining information on patient views of hospital care, such as whether patients feel they were treated with respect and provided with appropriate information regarding their treatment.

'Patient satisfaction surveys' are different from other sources of hospital quality data because they provide the consumer's perspective on hospital services. High patient satisfaction is desirable because it suggests the hospital care received met the expectations and needs of patients.

Given that 'patient satisfaction surveys' differ in content, timing and scope across jurisdictions, it is not possible to compare results nationally.

Table 9.18 **Patient satisfaction data published in each edition of the Report**

Report Edition	*NSW*	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*
1995	✓	✓	✓	✓	✗	✗	✓	✗
1999	✗	✓	✗	✓	✗	✓	✓	✓
2000	✓	✓	✓	✓	✗	✓	✓	✗
2001	✓	✗	✗	✓	✗	✓	✓	✗
2002	✗	✓	✗	✓	✓	✓	✓	✗
2003	✓	✗	✓	✓	✓	✓	✓	✗
2004	✓	✓	✗	✓	✓	✓	✓	✗
2005	✓	✓	✗	✓	✓	✗	✗	✗

Source: SCRCSSP (1995, 1999, 2000, 2001a, 2002 and 2003); SCRGSP 2004.

Jurisdictions reported the following 'patient satisfaction surveys':

- In 2003 in NSW, a phone survey was conducted of patients who had stayed for at least one night in hospital in the previous 12 months. The sample size was 2012 and the response rate was 68.2 per cent. Overall, 43.5 per cent rated the care they received as 'excellent', 30.5 per cent as 'very good', 16.9 per cent rated it as 'good', 6.3 per cent rated it as 'fair', and 2.8 per cent rated it as 'poor' (table 9A.58).
- The Victorian Patient Satisfaction Monitor was conducted from 2000 to 2004, using a mailout questionnaire of adult inpatients receiving acute care in Victorian public hospitals. For September 2002 to August 2003, the sample size was 16 349 patients and the response rate was 42.2 per cent. Overall, 95 per sent of patients surveyed across Victoria were either very satisfied or fairly satisfied with their hospital stay, 87 per cent of patients felt they were helped a great deal

or quite a bit by their stay, and 88 per cent felt they spent the right amount of time in hospital (table 9A.63).

- In Queensland, a survey will be undertaken by early 2005 targeting patients who used the State's public hospitals during May and October 2004 (table 9A.69).
- In WA, a mailout survey of inpatients at public hospitals was conducted between August 2003 and June 2004. Adults and children with short stays of two days or less, including same day patients were targeted. The total sample was 4515, with a 47 per cent response rate. For adults, the overall indicator of satisfaction (weighted by the importance of each issue as ranked by the patient) was 77.7. For children, the overall indicator of satisfaction (weighted by the importance of each issue as ranked by the patient) was 78.1 (table 9A.73).
- In SA, telephone interviews were conducted with patients aged 16–80 years who were discharged in June 2003 after staying one to 34 nights in an SA public hospital. Interviews were completed with 2620 patients, with a participation rate of 80.8 per cent. The State-wide satisfaction score was 86.3 (scored from 0 to 100, being least to most satisfied) (table 9A.77).
- In Tasmania, a survey was undertaken, with results available early 2005 (table 9A.81).
- No new survey results are available for the ACT or the NT.

Capability

Accreditation

The Steering Committee has identified 'hospital accreditation' as an indicator of capability in public hospitals (box 9.13).

Box 9.13 **Accreditation**

'Accreditation' signifies professional and national recognition awarded to hospitals and other healthcare facilities that meet defined industry standards. Public hospitals may seek accreditation through the ACHS Evaluation and Quality Improvement Program, the Australian Quality Council (now known as Business Excellence Australia), the Quality Improvement Council, the International Organisation for Standardization 9000 Quality Management System or other equivalent programs. Jurisdictions apply specific criteria to determine which accreditation programs are suitable. Quality programs require hospitals to demonstrate continual adherence to quality improvement standards to gain and retain accreditation.

(Continued on next page)

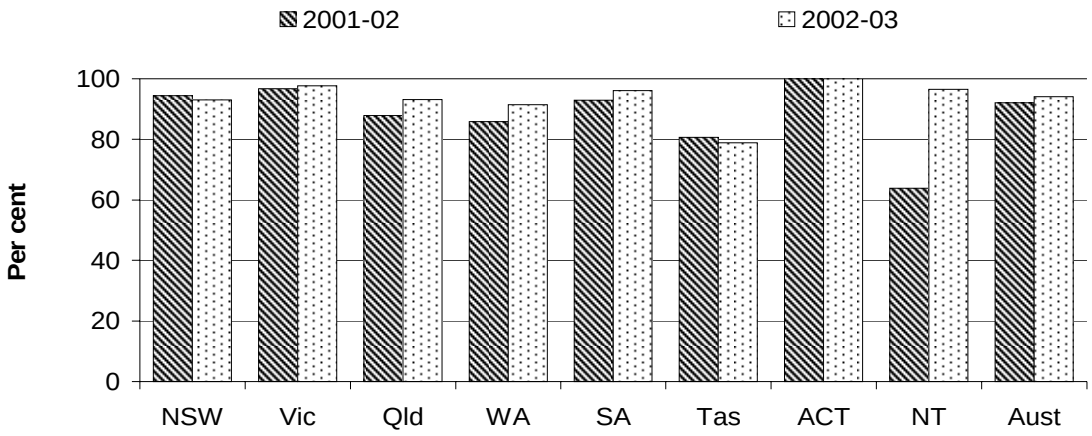
Box 9.13 **(Continued)**

'Accreditation' is reported as the ratio of accredited beds to all beds in public hospitals, because the number of beds indicates the level of hospital capacity or activity. Accreditation of healthcare facilities has contributed significantly to quality practices and system wide awareness of quality issues, although accreditation processes could be improved (ACSQHC, 2002). High levels of accreditation amongst hospitals are associated with high quality standards in the public hospital sector.

It is not possible to draw conclusions about the quality of care in those hospitals that do not have 'accreditation'. Public hospital accreditation is voluntary in all jurisdictions except Victoria, where it is now mandatory for all public hospitals (excluding those that provide only dental or mothercraft services). The costs of preparing a hospital for accreditation are significant, so a low level of accreditation may reflect cost constraints rather than poor quality. Also, the cost of accreditation may not rise proportionally with hospital size. This would be consistent with larger hospitals being more active in seeking accreditation (because it is relatively less costly for them) than actually offering superior care.

Hospitals accounting for 94 per cent of public hospital beds were accredited at 30 June 2003. Across jurisdictions, the proportion of public hospital accredited beds ranged from 100 per cent in the ACT to 79 per cent in Tasmania (figure 9.13).

Figure 9.13 **Proportion of accredited beds, public hospitals[a, b]**



a Where average available beds for the year were not available, bed numbers at 30 June 2003 were used. **b** Includes psychiatric hospitals.

Source: AIHW (2004a, 2003a); table 9A.13.

Continuity

The Steering Committee has identified continuity as an area for development in future reports (box 9.14). No indicators of continuity have yet been developed.

Box 9.14 **Continuity**

The Steering Committee has agreed that an important aspect of the quality of care is the continuity of care — that is, the provision of uninterrupted, timely, coordinated healthcare, interventions and actions across programs, practitioners and organisations.

Sustainability

The Steering Committee has identified 'capital quality' as an indicator of sustainability. This is an area for development in future reports (box 9.15). No indicators of sustainability have yet been developed.

Box 9.15 **Capital quality**

The Steering Committee has agreed to develop an indicator of 'capital quality' as a measure of the capacity of public hospital infrastructure to respond to emerging needs.

Outputs — efficiency

Two approaches to measuring the efficiency of public hospital services are used in this Report: the 'cost per casemix-adjusted unit of output' (the unit cost) and the 'casemix-adjusted relative length of stay index'. The latter is used because costs are correlated with the length of stay at aggregate levels of reporting.

The Review's approach is to report the full costs of a service where they are available. Where the full costs of a service cannot be accurately measured, the Review seeks to report estimated costs that are comparable. Where differences in comparability remain, the differences are documented. The Review has identified financial reporting issues that have affected the accuracy and comparability of unit costs for acute care services. These include the treatment of payroll tax, superannuation, depreciation and the user cost of capital associated with buildings and equipment. A number of issues remain to further improve the quality of these estimates.

Costs associated with non-current physical assets (such as depreciation and the user cost of capital) are potentially important components of the total costs of many services delivered by government agencies. Differences in the techniques for measuring non-current physical assets (such as valuation methods) may reduce the comparability of cost estimates across jurisdictions. In response to concerns regarding data comparability, the Steering Committee initiated a study, reported in *Asset Measurement in the Costing of Government Services* (SCRCSSP 2001b). The aim of the study was to examine the extent to which differences in asset measurement techniques applied by participating agencies may affect the comparability of reported unit costs.

The results reported in the study for public hospitals indicate that different methods of asset measurement could lead to quite large variations in reported capital costs. Considered in the context of total unit costs, however, the differences created by these asset measurement effects were relatively small because capital costs represent a relatively small proportion of total cost, although the differences may affect cost rankings across jurisdictions. A key message from the study was that the adoption of national uniform accounting standards across all service areas would be a desirable outcome from the perspective of the Review. The results are discussed in more detail in chapter 2.

Care needs to be taken, therefore, in comparing the available indicators of efficiency across jurisdictions. Differences in counting rules, the treatment of various expenditure items (for example, superannuation) and the allocation of overhead costs have the potential to hinder such comparisons. In addition, differences in the use of salary packaging may allow hospitals to lower their wage bills (and thus State or Territory government expenditure) while maintaining the after-tax income of their staff. No data were available for reporting on the effect of salary packaging and any variation in its use across jurisdictions.

Differences in the scope of services being delivered by public hospitals may also reduce the comparability of efficiency measures. Some jurisdictions admit patients who may be treated as non-admitted patients in other jurisdictions (AIHW 2000).

Recurrent cost per casemix-adjusted separation

The Steering Committee has identified 'recurrent cost per casemix-adjusted separation' as an indicator of the efficiency of public hospitals (box 9.16).

Box 9.16 **Recurrent cost per casemix-adjusted separation**

The 'recurrent cost per casemix-adjusted separation' is a proxy indicator of efficiency in treating admitted patients. It measures the average cost of providing care for an admitted patient (overnight stay or same day) adjusted with AR-DRG cost weights for the relative complexity of the patient's clinical condition and of the hospital services provided (AIHW 2000).

This measure includes overnight stays, same day separations, private patient separations in public hospitals and private patient recurrent costs. It excludes non-acute hospitals, mothercraft hospitals, multipurpose hospitals, multipurpose services, hospices, rehabilitation hospitals, psychiatric hospitals and hospitals in the unpeered and other peer groups. The data exclude expenditure on non-admitted patient care, the user cost of capital and depreciation, research costs and payroll tax.

All admitted patient separations and their costs are included, and most separations are for acute care. Cost weights are not available for admitted patients who received non-acute care (about 2.7 per cent of total admitted patient episodes in 2002-03), so the cost weights for acute care are applied to non-acute separations also. The admitted patient cost proportion is an estimate only. Some jurisdictions have developed experimental cost estimates for non-psychiatric acute patients which are also reported here. Separations for psychiatric acute care patients are excluded because AR-DRG cost weights are a poor predictor of the cost of psychiatric separations.

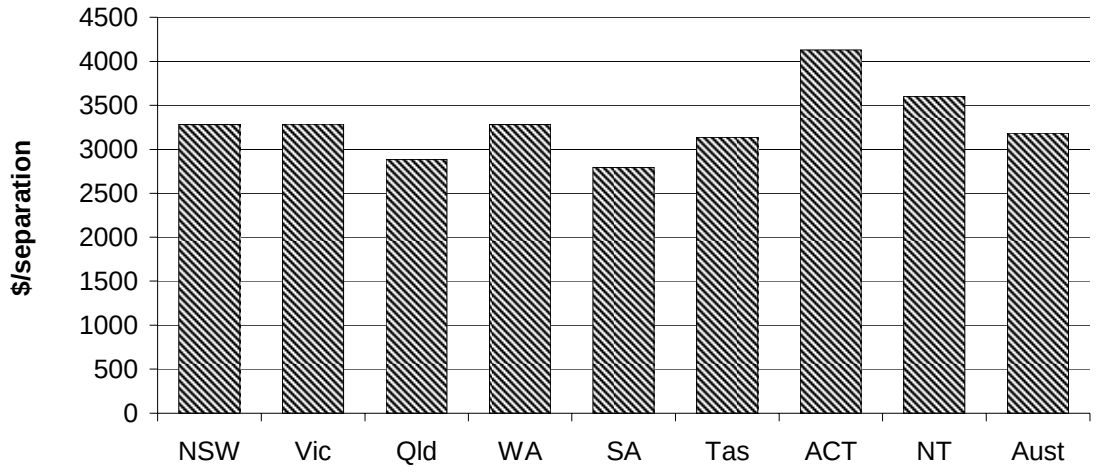
Lower 'recurrent cost per casemix-adjusted separation' may reflect more efficient service delivery in public hospitals. This indicator needs to be viewed, however, in the context of the set of performance indicators as a whole. A hospital may be an efficient provider of services, yet provide services ineffectively — for example, relatively low unit costs may be associated with inferior service quality.

Hospital recurrent expenditures on Indigenous and non-Indigenous people may differ (AIHW 2001b). These differences may influence jurisdictional variation in unit costs.

'Recurrent cost per casemix-adjusted separation' for each jurisdiction in 2002-03 is presented in figure 9.14. 'Recurrent cost per casemix-adjusted separation' is affected by differences in the mix of admitted patient services produced by hospitals in each jurisdiction. Data are therefore presented here according to the 'peer groups' of the hospitals, to enable hospitals with similar activities to be compared.

The 'recurrent cost per casemix-adjusted separation' nationally was $3184 in 2002-03. Across jurisdictions it was highest in the ACT ($4128) and lowest in SA ($2796) (figure 9.14).

Figure 9.14 **Recurrent cost per casemix-adjusted separation, 2002-03[a, b, c, d, e, f, g]**

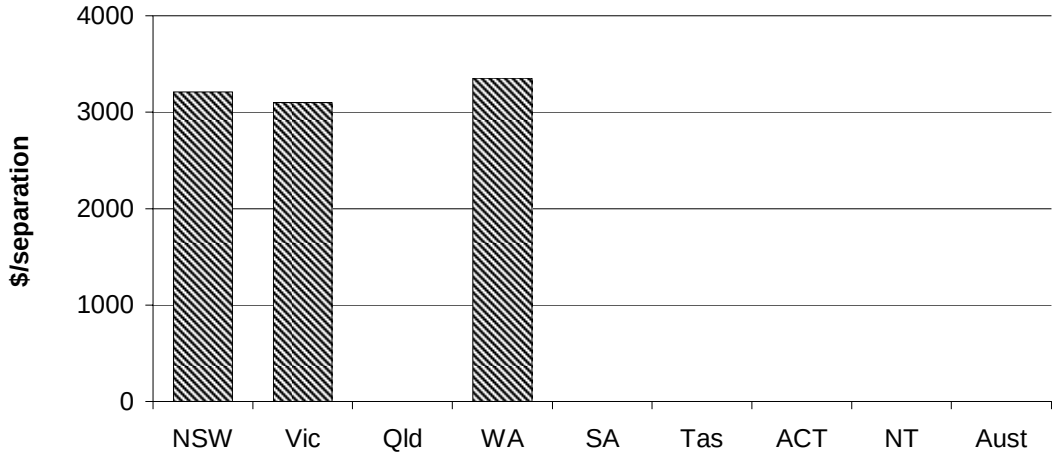


a Excludes depreciation and the user cost of capital, spending on non-admitted patient care, research costs and payroll tax. **b** Casemix-adjusted separations are the product of total separations and average cost weight. Average cost weights, from the National Hospital Morbidity Database, are based on acute and unspecified separations and newborn episodes of care with qualified days, using the 2000-01 AR-DRG v4.2 cost weights (DHA 2003). **c** Excludes separations for which the care type was reported as 'newborn with no qualified days', and records for hospital boarders and posthumous organ procurement. **d** Excludes psychiatric hospitals, drug and alcohol services, mothercraft hospitals, unpeered and other hospitals, hospices, rehabilitation facilities, small non-acute hospitals and multipurpose services. **e** Data for NSW are preliminary. **f** NT data need to be interpreted in conjunction with the cost disabilities associated with hospital service delivery in the NT. **g** All hospitals in the NT, one very small hospital in Victoria and two very small hospitals in SA have had their inpatient fraction estimated using the HASAC ratio (see AIHW 2004a).

Source: AIHW (2004a); table 9A.4.

Experimental estimates of 'recurrent cost per casemix-adjusted separation' for acute, non-psychiatric patients are reported for NSW, Victoria and WA. These estimates aim to overcome the need to apply cost weights for acute care to non-acute care separations (box 9.16). Recurrent costs per acute, non-psychiatric casemix-adjusted separation in 2002-03 were $3120 in NSW, $3099 in Victoria and $3351 in WA (figure 9.15). The effect of restricting the analysis to acute non-psychiatric admitted patients was to decrease the estimated recurrent cost per casemix-adjusted separation (figure 9.14) by 3.8 per cent for NSW, 6.7 per cent for Victoria and 2.1 per cent for WA (AIHW 2004a).

Figure 9.15 **Recurrent cost per acute non-psychiatric casemix-adjusted separation, 2002-03** [a, b, c, d, e]



[a] Excludes psychiatric, mothercraft, hospices, small non-acute, unpeered and other hospitals, rehabilitation facilities, and multipurpose services. This subset excludes hospitals where the inpatient fraction was equal to the acute inpatient fraction and more than 1000 non-acute patient days were recorded. Also excludes hospitals where the apparent cost of non-acute patients exceed $1000 per day and more than 1000 non-acute patient days were recorded. [b] Expenditure data for NSW are preliminary. [c] Acute separations are those where the care type is acute, newborn with qualified days, or not reported. Psychiatric separations are those with psychiatric care days. [d] Average cost weight from the National Hospital Morbidity Database, based on acute and unspecified separations and episodes of newborn care with qualified days, using the 2001-02 AR-DRG version 4.2 cost weights (DHA 2003). [e] Cost estimates include adjustment for private patient medical costs: $139 for NSW, $80 for Victoria and $85 for WA.

Source: AIHW (2004a).

To facilitate comparisons across hospitals with similar activities (box 9.16), data are reported by peer group (table 9A.25). The dominant peer classification is the principal referral and specialist women's and children's category. In 2002-03, these hospitals accounted for 67.8 per cent of public acute and psychiatric hospital expenditure and 66.1 per cent of separations (AIHW 2004a). The data for principal referral hospitals (excluding specialist women's and children's hospitals) are presented in table 9.19. Nationally, the 'recurrent cost per casemix-adjusted separation' for principal referral hospitals in 2002-03 was $3178. For those jurisdictions with data available to be published, the 'recurrent cost per casemix-adjusted separation' for principal referral hospitals was highest in NSW ($3363) and lowest in Queensland ($2977).

Table 9.19 **Recurrent cost per casemix-adjusted separation, principal referral public hospitals, 2002-03[a, b, c]**

	Unit	*NSW*	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
Hospitals	no.	19	15	12	3	4	2	1	1	57
Average beds per hospital	no.	420	550	414	523	385	382	493	295	454
Average separations per hospital	no.	36 541	56 112	36 281	55 297	48 642	33 579	49 838	35 073	43 577
Average cost weight	no.	1.09	1.00	1.04	1.08	1.09	1.08	0.94	0.83	1.04
Cost per casemix-adjusted separation	**$**	**3 363**	**3 227**	**2 977**	**np**	**np**	**2 997**	**np**	**np**	**3 178**
Recurrent expenditure on principal referral hospitals	$m	3 574	3 668	1 737	np	np	285	np	np	11214
Recurrent expenditure on all public hospitals	$m	6 436	5 004	2 766	1 748	1 425	370	335	239	18 323

a Principal referral hospitals are classified as metropolitan hospitals with more than 20 000 acute casemix-adjusted separations per year and rural hospitals with more than 16 000 acute casemix-adjusted separations per year. **b** Expenditure data exclude depreciation and the user cost of capital, spending on non-admitted patient care, research costs and payroll tax. **c** Average cost weight from the National Hospital Morbidity Database, based on acute and unspecified separations, and newborn episodes of care with qualified days, using the 2000-01 AR-DRG v4.1 cost weights (DHAC, unpublished) applied to AR-DRGs v4.2. **np** Not published.

Source: AIHW (2004a); table 9A.25.

Total cost per casemix-adjusted separation

The Steering Committee has identified 'total cost per casemix-adjusted separation' as an indicator of the efficiency of public hospitals (box 9.17).

Among the jurisdictions for which all components of 'total cost per casemix-adjusted separation' were available (that is, labour, materials and capital costs), the 'total cost per casemix-adjusted separation' in 2002-03 ranged from $4626 in the ACT to $3158 in SA (figure 9.16).[10] Labour costs per casemix adjusted separation were available for all jurisdictions and accounted for the majority of total hospital costs. The labour cost per casemix-adjusted separation (including medical and non-medical labour costs) in 2002-03 was highest in the ACT ($2759) and lowest in SA ($1851) (figure 9.16 and table 9A.4).

[10] Capital costs for 2002-03 were not available for WA, Tasmania and the NT (table 9A.26).

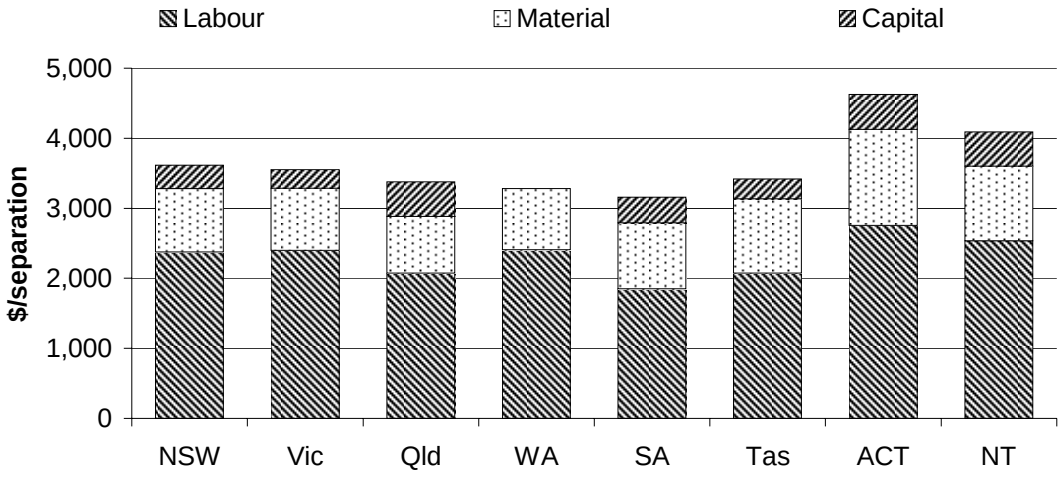
Box 9.17 **Total cost per casemix-adjusted separation**

This indicator is defined as the recurrent cost per casemix-adjusted separation plus the capital costs (depreciation and the user cost of capital of buildings and equipment, excluding the user cost of capital associated with land) per casemix-adjusted separation. The indicator is included because it allows the full cost of hospital services to be considered in a single measure. The hospitals included in this measure are the same as for recurrent cost per casemix-adjusted separation (box 9.16).

Depreciation is defined as the cost of consuming an asset's services. It is measured by the reduction in value of an asset over the financial year. The user cost of capital is the opportunity cost of the capital and is equivalent to the return foregone from not using the funds to deliver other government services or to retire debt. Interest payments represent a user cost of capital, so are excluded from recurrent expenditure where user costs of capital are calculated separately and added to recurrent costs. Interest expenses are deducted from capital costs in all jurisdictions to avoid double counting.

A lower 'total cost per casemix-adjusted separation' may reflect more efficient service delivery in public hospitals. This indicator needs to be viewed, however, in the context of the set of performance indicators as a whole because a hospital may be an efficient provider of services yet provide services ineffectively — for example, relatively low unit costs may be associated with inferior service quality.

Figure 9.16 **Total cost per casemix-adjusted separation, public hospitals, 2002-03[a, b, c]**



a 'Labour' includes medical and non-medical labour costs. 'Material' includes other non-labour recurrent costs. **b** 'Capital cost' includes the user cost of capital plus depreciation associated with the delivery of admitted patient services in the public hospitals described in the data for recurrent cost per casemix-adjusted separation. 'Capital cost' excludes land and the user cost of capital associated with land (reported in table 9A.26). **c** Variation across jurisdictions in the collection of capital related data suggests the data are only indicative. Capital cost per casemix-adjusted separation data are not available for WA.

Source: AIHW (2004a); State and Territory governments (unpublished); table 9A.4 and table 9A.26.

Relative stay index

The Steering Committee has identified the 'relative stay index' as an indicator of the efficiency of public hospitals (box 9.18). The 'relative stay index' for acute care patient days in public hospitals in 2002-03 was highest in the NT (1.16) and lowest in Victoria and Queensland (0.93) (figure 9.17). The 'relative stay index' by accommodation status and by medical, surgical and other AR-DRGs is reported in tables 9A.27 and 9A.28.

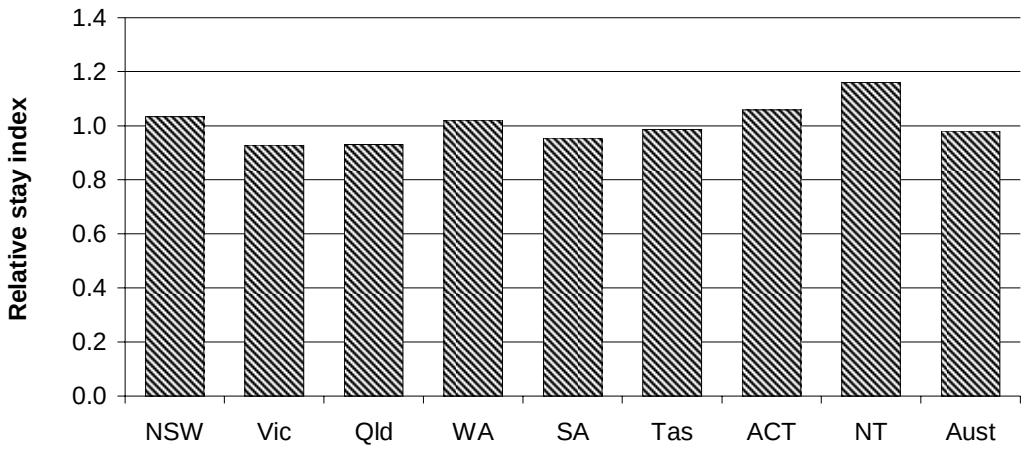
Box 9.18 **Relative stay index**

The 'relative stay index' is defined as the actual number of acute care patient days divided by the expected number of acute care patient days adjusted for casemix. Casemix adjustment allows comparisons to take account of variation in types of service provided but not other influences on length of stay, such as Indigenous status. Acute care separations only are included. Section 9.5 contains more detailed definition outlining exclusions from the analysis.

The 'relative stay index' for Australia for all hospitals (public and private) is one. A 'relative stay index' greater than one indicates that average length of patient stay is higher than expected given the jurisdiction's casemix distribution. A 'relative stay index' of less than one indicates that the number of bed days used was less than expected. A low 'relative stay index' is desirable if it is not associated with poorer health outcomes or significant extra costs outside the hospital systems (for example, in home care).

States and territories vary in their thresholds for classifying patients as either same day admitted patients or outpatients. These variations affect the 'relative stay index'.

Figure 9.17 **Relative stay index, public hospitals, 2002-03[a, b]**



a Excludes separations for which the care type was reported as 'newborn with no qualified days' and records for hospital boarders and posthumous organ procurement. **b** Based on all hospitals using the direct method.

Source: AIHW (2004a); table 9A.27.

Recurrent cost per non-admitted occasion of service

The Steering Committee has identified the 'recurrent cost per non-admitted occasion of service' as an indicator of the efficiency of public hospitals (box 9.19).

Jurisdictions able to supply 2002-03 data for this indicator reported the following results:

- In NSW, the emergency department cost per occasion of service was $171 for 2.0 million occasions, the outpatient cost per occasion of service was $79 for 10.1 million occasions and the overall cost per occasion of service was $87 for 18.5 million occasions (table 9A.60).
- In WA, the emergency department cost per occasion of service was $190 for 570 975 occasions, the outpatient cost per occasion of service was $98 for 2.6 million occasions and the overall cost per occasion of service was $100 for 4.2 million occasions (table 9A.75).
- In SA, the emergency department cost per occasion of service was $232 for 460 546 occasions, the outpatient cost per occasion of service was $160 for 1.3 million occasions and the overall cost per occasion of service was $179 for 1.7 million occasions (table 9A.80).
- In Tasmania, the emergency department cost per occasion of service was $222 for 92 132 occasions and the outpatient cost per occasion of service was $122 for 382 041 occasions (table 9A.83).
- In the ACT, the emergency department cost per occasion of service was $327 for 96 151 occasions, the outpatient cost per occasion of service was $68 for 493 650 occasions and the overall cost per occasion of service was $110 for 589 801 occasions (table 9A.86).

Box 9.19 **Recurrent cost per non-admitted occasion of service**

Non-admitted occasions of service (including emergency departments and outpatient services) account for a significant proportion of hospital expenditure. This indicator is included to help assess efficiency in this part of the hospital system.

The cost per non-admitted occasion of service is the proportion of expenditure allocated to patients who were not admitted, divided by the total number of non-admitted patient occasions of service in public hospitals. Occasions of service include examinations, consultations, treatments or other services provided to patients in each functional unit of a hospital.

(Continued on next page)

Box 9.19 **(Continued)**

Lower recurrent cost per non-admitted occasion of service may reflect more efficient service delivery in public hospitals. This indicator needs to be viewed, however, in the context of the set of performance indicators as a whole because a hospital may be an efficient provider of services yet provide services ineffectively — for example, relatively low unit costs may be associated with inferior service quality.

These data are not comparable across jurisdictions, given differences in practice. Reporting categories vary across jurisdictions, and further inconsistencies arise as a result of differences in outsourcing practices. In some cases, for example, outsourced occasions of service may be included in expenditure on non-admitted services, but not in the count of occasions of service. In addition, this indicator does not adjust for the complexity of service — for example, a simple urine glucose test is treated equally with a complete biochemical analysis of all body fluids (AIHW 2000).

Victoria collects data on the basis of cost per encounter. An encounter includes the clinic visit and all ancillary services provided within a 30 day period either side of the clinic visit. Based on cost data from 12–14 hospitals, the average cost per encounter was $125 in 2002-03 (table 9A.66).

Given the lack of a nationally consistent non-admitted patient classification system, the Review has included national data from the Australian Government Department of Health and Ageing's National Hospital Cost Data Collection (NHCDC) for 'cost per occasion of service for emergency departments' (table 9.20) and 'cost per occasion of service for outpatients' (table 9.21).

The NHCDC collects data on a consistent basis across a sample of hospitals that is expanding over time. The sample for each jurisdiction is not necessarily representative, however, because hospitals contribute data on a voluntary basis. The NHCDC data are affected by differences in costing and admission practices across jurisdictions and hospitals. In addition, the purpose of the NHCDC is to calculate between-DRG cost weights, not to compare the efficiency of hospitals. The emergency department data are based on figures provided by 139 public hospitals across Australia and the outpatient (tier 1) data are based on figures provided by 34 public hospitals. Outpatient tier 0 data were contributed by 137 public hospitals (table 9A.30). These data suggest that 'cost per occasion of service' for the public sector was $97 in 2002-03.

Table 9.20 **Emergency department average cost per occasion of service, public hospitals, by triage class, 2002-03 (dollars)[a, b, c, d, e]**

Triage category	*Population estimated — average cost per occasion of service* [f]	*Actual — average cost per occasion of service*
Admitted triage 1	772	783
Admitted triage 2	442	450
Admitted triage 3	388	394
Admitted triage 4	326	334
Admitted triage 5	254	266
Non-admitted triage 1	474	486
Non-admitted triage 2	365	373
Non-admitted triage 3	314	316
Non-admitted triage 4	231	230
Non-admitted triage 5	174	178
Did not wait[g]	74	74
Total	275	281

[a] Not all hospitals that submit data to the NHCDC submit emergency department data. The emergency department national database covers only acute hospitals with emergency department cost and activity. [b] Based on data from 139 public sector hospitals. [c] Victorian emergency department data are not included. Victoria is working to rectify this problem. [d] Costing and admission practices vary across jurisdictions and hospitals. [e] Depreciation costs are included. [f] Estimated population costs are obtained by weighting the sample results according to the known characteristics of the population. [g] 'Did not wait' means those presentations to an emergency department who were triaged but did not wait until the completion of their treatment, at which time they would have been either admitted to hospital or discharged home.

Source: DHA 2004a; table 9A.29.

Table 9.21 **Non-admitted clinic occasions of service for tier 1 clinics, sample results, public sector, Australia, 2002-03[a, b, c]**

	Occasions of service	*Average cost*
	no.	$/occasion of service
Allied health and/or clinical nurse specialist	762 018	75
Dental	12 663	133
Medical	830 758	244
Obstetrics and gynaecology	248 715	164
Paediatric	46 745	254
Psychiatric	38 859	229
Surgical	570 239	143
Total	2 509 997	161

[a] Includes depreciation costs. [b] Based on 33 public sector hospitals. [c] Excludes Victorian outpatient data.

Source: DHA 2004a; table 9A.31.

Outcomes

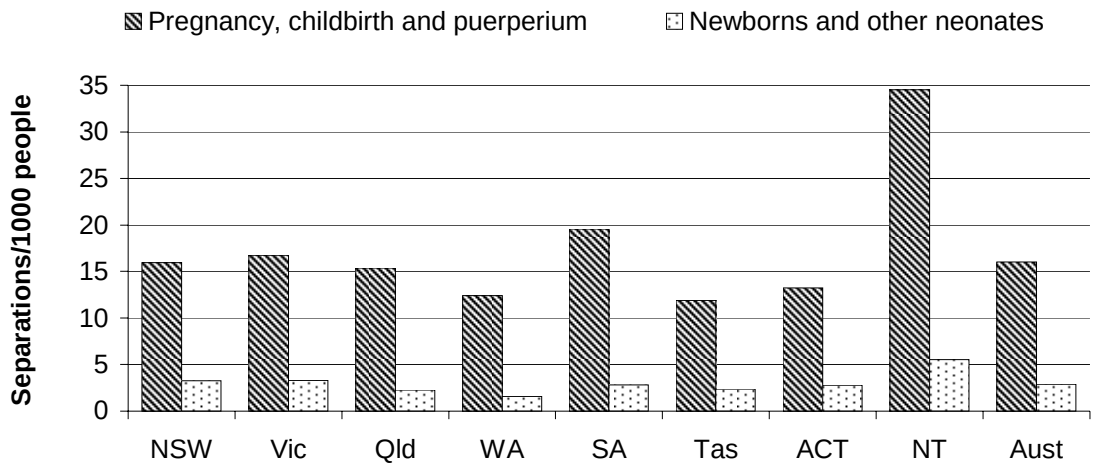
No outcome indicators are included for public hospitals in this Report. See section 9.4 for future directions for outcome indicators.

9.3 Maternity services

Profile

Maternity services (defined as AR-DRGs relating to pregnancy, childbirth and the puerperium, and newborns and other neonates) accounted for 9.4 per cent of total acute separations in public hospitals (table 9A.33) and around 10.1 per cent of the total cost of all acute separations in public hospitals in 2002-03 (table 9A.32). The NT had the highest rate of acute separations per 1000 people for maternity services (40.0) in 2002-03 and WA had the lowest (14.0) (figure 9.18).

Figure 9.18 **Separation rates for maternity services, public hospitals, 2002-03[a, b, c]**



a The puerperium refers to the period of confinement immediately after labour (around six weeks). **b** Newborns and other neonates include babies aged less than 28 days or babies aged less than 1 year with admission weight of less than 2500 grams. **c** Separations for which the type of episode of care was reported as acute or newborn with qualified patient days or was not reported.

Source: AIHW (2004a); table 9A.33.

In Australian public hospitals in 2002-03, vaginal deliveries without complicating diagnosis accounted for a substantial proportion of the separations for pregnancy, childbirth and the puerperium (30.0 per cent). In the context of all AR-DRGs in public hospitals, vaginal deliveries without complicating diagnosis comprised the largest number of overnight acute separations (table 9.3) and the third highest cost ($245.6 million) (table 9A.34).

The complexity of cases across jurisdictions for maternity services is partly related to the mother's age at the time of giving birth. The mean age of mothers giving birth varied across jurisdictions in 2002 and 2003 (table 9.22).

Table 9.22 **Mean age of mothers at time of giving birth, public hospitals**

	NSW	*Vic*	*Qld* [a]	*WA*	*SA*	*Tas*	*ACT* [a]	*NT*
2002								
First birth	27.3	27.1	24.9	25.5	25.8	26.3	27.2	26.7
Second birth	29.6	29.5	27.7	28.0	28.6	28.1	29.3	27.1
Third birth	30.9	31.0	29.3	29.3	30.3	29.9	31.1	28.1
All births	29.2	29.1	27.4	27.7	28.1	28.6	28.9	27.5
2003								
First birth	27.5	27.4	25.2	25.8	26.0	26.6	na	24.8
Second birth	29.8	29.7	27.8	28.3	28.8	29.1	na	27.2
Third birth	31.1	31.2	29.6	29.8	30.5	30.2	na	28.2
All births	29.4	29.3	27.6	28.0	28.3	29.0	na	26.9

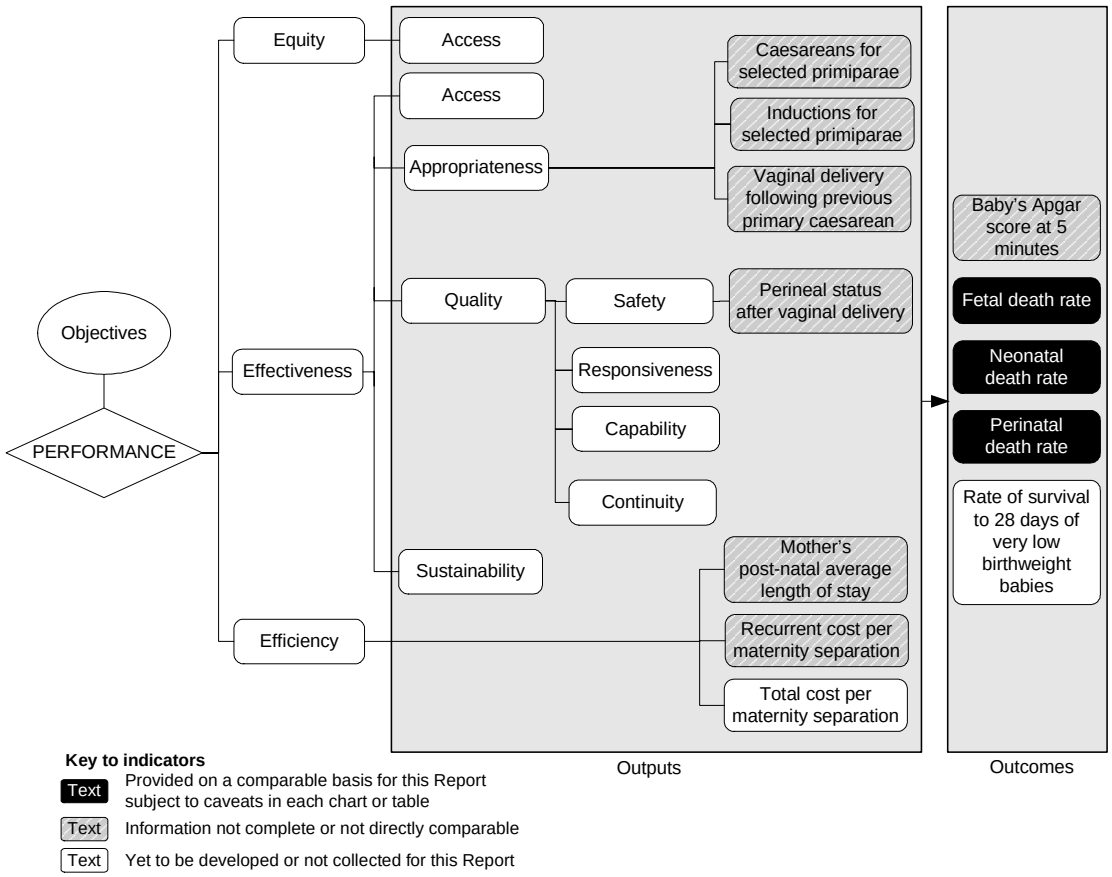
a Data are preliminary and subject to revision. **na** not available.

Source: State and Territory governments (unpublished).

Framework of performance indicators

The performance framework for maternity services is outlined in figure 9.19, and has the same objectives as those for public hospitals in general. The framework is under development by the Steering Committee and, as with all the performance indicator frameworks, will be subject to regular review. The performance indicator framework shows which data are comparable in the 2005 Report (figure 9.19). For data that are not considered strictly comparable, the text includes relevant caveats and supporting commentary. Chapter 1 discusses data comparability from a Report-wide perspective. The 'Health preface' explains the performance indicator framework for health services as a whole, including the subdimensions for quality and sustainability that have been added to the standard Review framework for health services.

Figure 9.19 **Performance indicators for maternity services**



Key performance indicator results

Outputs — equity

Access

The Steering Committee has identified equity of access as an area for development in future reports (box 9.20).

Box 9.20 **Equity of access**

An indicator of the equity of access to maternity services is yet to be developed.

Outputs — effectiveness

Access

The Steering Committee has identified the effectiveness of access to maternity services as an area for development in future reports (box 9.21).

Box 9.21 **Effectiveness of access**

An indicator of the effectiveness of access to maternity services is yet to be developed.

Appropriateness

The Steering Committee has developed two indicators of the appropriateness of maternity services: 'caesarean and induction rates for selected primiparae' (box 9.22) and the 'rate of vaginal delivery following primary caesarean' (box 9.23).

Caesareans and inductions for selected primiparae

Box 9.22 **Caesareans and inductions for selected primiparae**

Labour inductions and birth by caesarean section are interventions that are appropriate in some circumstances, depending on the health and wellbeing of mothers and babies.

'Caesareans and inductions for selected primiparae' are reported for women aged between 25–29 years who have had no previous deliveries, with a vertex presentation (that is, the crown of the baby's head is at the lower segment of the mother's uterus) and a gestation length of 37–41 weeks. This group is considered to be low risk parturients,[11] so caesarean or induction rates should be low in their population.

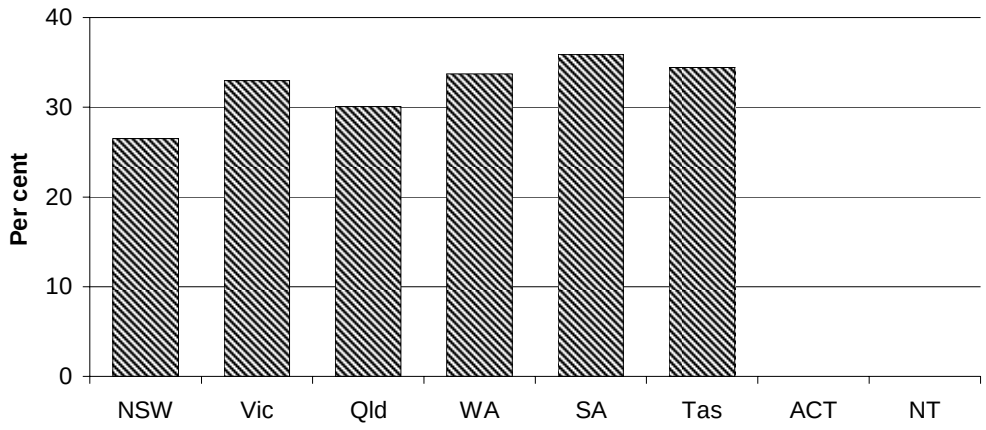
The indicator is defined as the number of inductions or caesareans for the selected primiparae divided by the number of the selected primiparae who give birth. High intervention rates may indicate a need for investigation.

In those jurisdictions that provided selected primiparae data for 2003, the proportion of selected primiparae whose deliveries were induced in public hospitals was highest in SA (35.9 per cent) and lowest in NSW (26.5 per cent) (figure 9.20). Induction rates for private hospitals are shown in table 9A.36 for comparison. They

[11] Parturient means 'about to give birth'. Primiparae refers to pregnant women who have had no previous pregnancy resulting in a live birth or stillbirth (Laws and Sullivan 2004).

are higher than the rate for public hospitals in all jurisdictions. Data for the ACT and NT for earlier years are included in tables 9A.43 and 9A.44.

Figure 9.20 **Inductions for selected primiparae, public hospitals, 2003[a]**

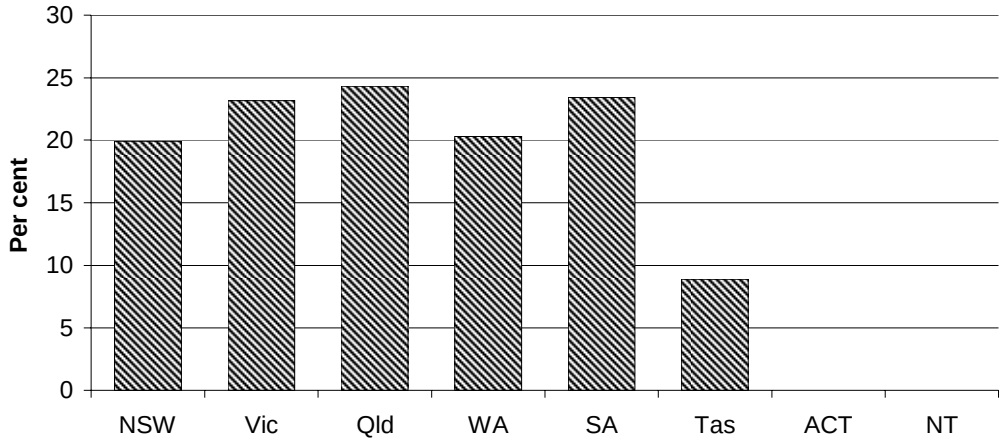


a 2003 data for the ACT and NT are not available. Data for Queensland are preliminary and subject to revision.

Source: State and Territory governments (unpublished); table 9A.36

In those jurisdictions that provided data for 2003, the proportion of selected primiparae whose deliveries were by caesarean section was highest in Queensland (24.3 per cent) and lowest in Tasmania (8.9 per cent) (figure 9.21). Caesarean rates for private hospitals are shown in table 9A.36 for comparison. They are higher than the rate for public hospitals in all jurisdictions. Data for the ACT and NT for earlier years are included in tables 9A.43 and 9A.44.

Figure 9.21 **Caesareans for selected primiparae, public hospitals, 2003[a]**



a 2003 data for the ACT and NT are not available. Data for Queensland are preliminary and subject to revision.

Source: State and Territory governments (unpublished); table 9A.36

Vaginal birth following previous primary caesarean

Box 9.23 **Vaginal birth following previous primary caesarean**

Birth by caesarean section is appropriate in some circumstances related to the health and wellbeing of mothers and babies. It may also be undertaken inappropriately, resulting in overmedicalisation of labour, poorer health outcomes and/or unnecessary costs.

The rate of 'vaginal delivery following previous primary caesarean section' is defined as the number of women delivering vaginally following a previous primary (first) caesarean section, as a proportion of the total number of women delivering who have had a previous primary caesarean section and no intervening pregnancies of longer than 20 weeks gestation (ACHS 2002).

In interpreting the results of this indicator, there is ongoing debate about the relative risk to both mother and baby of a repeat caesarean section compared with a vaginal birth following a previous primary caesarean. Low rates of vaginal birth following a previous primary caesarean may warrant investigation, or on the other hand, they may indicate appropriate clinical caution. When interpreting this indicator, emphasis needs to be given to the potential for improvement.

The data for 'vaginal birth following a primary caesarean' are sourced from the ACHS Comparative Report Service (Clinical Indicators) and collected for internal clinical review by individual hospitals. The ACHS data are predominantly used to demonstrate the potential for improvement across Australian hospitals if all hospitals could achieve the same outcomes as those of hospitals with the best outcomes for patients. Statewide conclusions cannot be drawn from the data because healthcare organisations contribute to the ACHS on a voluntary basis, so the data are not necessarily drawn from representative samples (box 9.8). Estimated rates should be viewed in the context of the statistical (standard) errors. High standard errors signal that data are particularly unreliable. Box 9.10 explains the reporting of the clinical indicators sourced from the ACHS.

New South Wales

Among those NSW public hospitals participating in the ACHS Comparative Report Service in 2003 the mean rate of 'vaginal delivery following a primary caesarean' was 18.7 per 100 deliveries (subject to a standard error of 0.5). The ACHS estimated that if the performance of all NSW public hospitals matched the performance of those at the 80th centile nationally, the rate of 'vaginal delivery following a primary caesarean' would be 2.3 per cent higher in that State (table 9.23). The terms in table 9.23 are defined in box 9.10.

Table 9.23 **Rate of vaginal delivery following primary caesarean per 100 deliveries, public hospitals, NSW, 2003[a, b]**

Hospitals	*Reports*	*Numerator (no. of VBACs)*	*Denominator (no. of deliveries)*	*Rate*	*Standard error* (±)
40	63	577	3 083	18.7	0.5
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. of VBACs)*	*Change represented by potential gains (%)*	*Potential outlier gains (no. of VBACs)*	*Potential stratum gains (no. of VBACs)*
21	14.9	70	2.3	–	220

VBAC = vaginal birth following primary caesarean. **a** Defined as the number of patients delivering vaginally following a previous primary caesarean section divided by the total number of patients delivering who had had a previous primary caesarean section and no intervening pregnancies of longer than 20 weeks gestation. **b** Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction. **–** Nil or rounded to zero.

Source: ACHS (unpublished); table 9A.45.

Victoria

Among those Victorian public hospitals participating in the ACHS Comparative Report Service in 2003, the mean rate of 'vaginal delivery following a primary caesarean' was 17.9 per 100 deliveries (subject to a standard error of 0.7). The ACHS estimated that if the performance of all Victorian public hospitals matched the performance of those at the 80th centile nationally, the rate of 'vaginal delivery following a primary caesarean' would be 3.1 per cent higher in that State (table 9.24). The terms in table 9.24 are defined in box 9.10.

Table 9.24 **Rate of vaginal delivery following primary caesarean per 100 deliveries, public hospitals, Victoria, 2003[a, b]**

Hospitals	*Reports*	*Numerator (no. of VBACs)*	*Denominator (no. of deliveries)*	*Rate*	*Standard error* (±)
20	34	295	1 646	17.9	0.7
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. of VBACs)*	*Change represented by potential gains (%)*	*Potential outlier gains (no. of VBACs)*	*Potential stratum gains (no. of VBACs)*
21.0	14.9	50	3.1	–	104

VBAC = vaginal birth following primary caesarean. **a** Defined as the number of patients delivering vaginally following a previous primary caesarean section divided by the total number of patients delivering who had had a previous primary caesarean section and no intervening pregnancies of longer than 20 weeks gestation. **b** Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction. **–** Nil or rounded to zero.

Source: ACHS (unpublished); table 9A.46.

Queensland

Among those Queensland public hospitals participating in the ACHS Comparative Report Service in 2003, the mean rate of 'vaginal delivery following a primary caesarean' was 16.2 per 100 deliveries (subject to a standard error of 0.8 per cent). The ACHS estimated that if the performance of all Queensland public hospitals matched the performance of those at the 80th centile nationally, the rate of 'vaginal delivery following a primary caesarean' would be 4.8 per cent higher in that State (table 9.25). The terms in table 9.25 are defined in box 9.10.

Table 9.25 **Rate of vaginal delivery following primary caesarean per 100 deliveries, public hospitals, Queensland, 2003[a, b]**

Hospitals	*Reports*	*Numerator (no. of VBACs)*	*Denominator (no. of deliveries)*	*Rate*	*Standard error* (±)
9	15	217.0	1 337.0	16.2	0.8
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. of VBACs)*	*Change represented by potential gains (%)*	*Potential outlier gains (no. of VBACs)*	*Potential stratum gains (no. of VBACs)*
21.0	14.9	64.0	4.8	–	62.0

VBAC = vaginal birth following primary caesarean. **a** Defined as the number of patients delivering vaginally following a previous primary caesarean section divided by the total number of patients delivering who had had a previous primary caesarean section and no intervening pregnancies of longer than 20 weeks gestation. **b** Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction. **–** Nil or rounded to zero.

Source: ACHS (unpublished); table 9A.47.

Western Australia

Among those WA public hospitals participating in the ACHS Comparative Report Service in 2003, the mean rate of 'vaginal delivery following a primary caesarean' was 13.5 per 100 deliveries (subject to a standard error of 0.9 per cent). The ACHS estimated that if the performance of all WA public hospitals matched the performance of those at the 80th centile nationally, the rate of 'vaginal delivery following a primary caesarean' would be 7.5 per cent higher in that State (table 9.26). The terms in table 9.26 are defined in box 9.10.

Table 9.26 **Rate of vaginal delivery following primary caesarean per 100 deliveries, public hospitals, WA, 2003[a, b]**

Hospitals	*Reports*	*Numerator (no. of VBACs)*	*Denominator (no. of deliveries)*	*Rate*	*Standard error* (±)
11	17	148	1 097	13.5	0.9
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. of VBACs)*	*Change represented by potential gains (%)*	*Potential outlier gains (no. of VBACs)*	*Potential stratum gains (no. of VBACs)*
21.0	14.9	82	7.5	–	21

VBAC = vaginal birth following primary caesarean. **a** Defined as the number of patients delivering vaginally following a previous primary caesarean section divided by the total number of patients delivering who had had a previous primary caesarean section and no intervening pregnancies of longer than 20 weeks gestation. **b** Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction. **–** Nil or rounded to zero.

Source: ACHS (unpublished); table 9A.48.

South Australia

Among those SA public hospitals participating in the ACHS Comparative Report Service in 2003, the mean rate of 'vaginal delivery following a primary caesarean' was 28.9 per 100 deliveries (subject to a standard error of 1.1 per cent). The ACHS estimated that if the performance of all SA public hospitals matched the performance of those at the 80th centile nationally, the rate of 'vaginal delivery following a primary caesarean' would be 7.9 per cent lower in that State (table 9.27). The terms in table 9.27 are defined in box 9.10.

Table 9.27 **Rate of vaginal delivery following primary caesarean per 100 deliveries, public hospitals, SA, 2003[a, b]**

Hospitals	*Reports*	*Numerator (no. of VBACs)*	*Denominator (no. of deliveries)*	*Rate*	*Standard error* (±)
7	12	194	671	28.9	1.1
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. of VBACs)*	*Change represented by potential gains (%)*	*Potential outlier gains (no. of VBACs)*	*Potential stratum gains (no. of VBACs)*
21.0	14.9	–53	–7.9	–	116

VBAC = vaginal birth following primary caesarean. **a** Defined as the number of patients delivering vaginally following a previous primary caesarean section divided by the total number of patients delivering who had had a previous primary caesarean section and no intervening pregnancies of longer than 20 weeks gestation. **b** Health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction. **–** Nil or rounded to zero.

Source: ACHS (unpublished); table 9A.49.

Australia

Data for Tasmania, the ACT and the NT are not published separately because fewer that five hospitals reported to the ACHS Comparative Report Service in each of those jurisdictions. Nationally, among those public hospitals participating in the ACHS Comparative Report Service in 2003, the mean rate of 'vaginal delivery following a primary caesarean' was 18.1 per 100 deliveries. The ACHS estimated that if the performance of all Australian public hospitals matched the performance of the top 20 per cent of public hospitals, the rate of 'vaginal delivery following a primary caesarean' would be 2.8 per cent higher.

Quality

The Steering Committee has identified four subdimensions of quality for health services: safety; responsiveness; capability; and continuity. For maternity services, data are reported against the subdimension of safety only.

Safety

Perineal status after vaginal delivery

The Steering Committee has identified 'perineal status after vaginal delivery' as an indicator of the safety of maternity services in public hospitals (box 9.24).

Box 9.24 **Perineal status after vaginal delivery**

Perineal lacerations caused by childbirth are painful, take time to heal and may result in ongoing discomfort and debilitating conditions such as faecal incontinence. Hospitals aim to minimise lacerations, particularly more severe lacerations (third and fourth degree), through labour management practices.

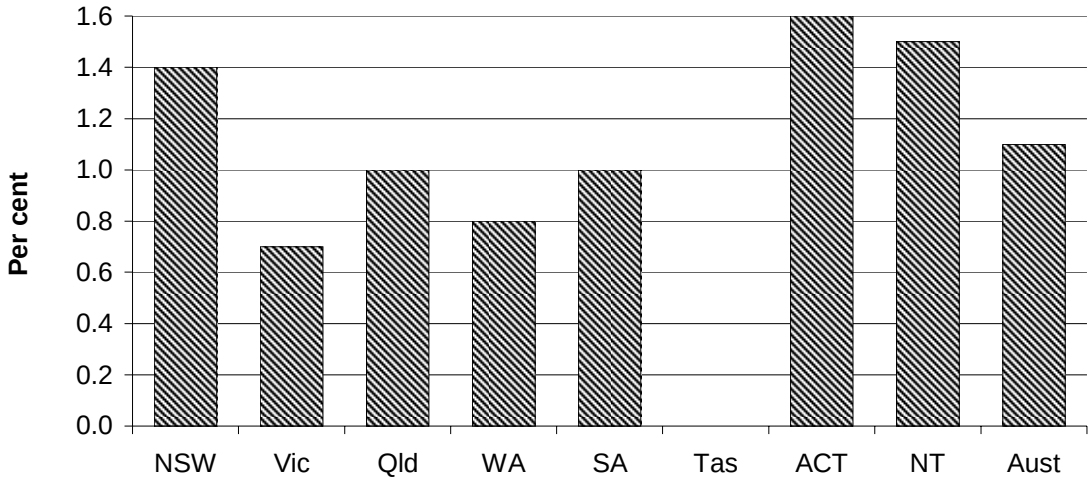
'Perineal status after vaginal delivery' is the state of the perineum following a vaginal birth (NHDC 2003). A third or fourth degree laceration is a perineal laceration or rupture (or tear following episiotomy) extending to at least the anal sphincter (NCCH 1998) (see section 9.5).

Severe lacerations (third and fourth degree laceration) of the perineum are not avoidable in all cases and so safe labour management is associated with a low (rather than zero) proportion of third or fourth degree lacerations.

In 2001, a third or fourth degree laceration occurred in 1.1 per cent of mothers nationally. Data were not available for Tasmania, but across other jurisdictions, the

proportion ranged from 1.6 per cent in the ACT to 0.7 per cent in Victoria (figure 9.22). More information on 'perineal status after vaginal delivery' (including the proportion of mothers with intact perineums following vaginal deliveries) is contained in attachment table 9A.35.

Figure 9.22 **Perineal status — mothers with third or fourth degree lacerations after vaginal delivery, all hospitals, 2001[a, b]**



a For multiple births, the perineal status after delivery of the first born child was used. **b** Data for Tasmania are not available.

Source: AIHW NPSU perinatal data collection (unpublished); table 9A.35.

Responsiveness

The Steering Committee has identified the responsiveness of maternity services as an area for development in future reports (box 9.25).

Box 9.25 **Responsiveness**

There is currently no indicator for the responsiveness of maternity services, but the patient satisfaction surveys reported on earlier in this chapter generally cover maternity patients.

Capability

The Steering Committee has identified the capability of maternity services as an area for development in future reports (box 9.26).

Box 9.26 **Capability**

There is currently no indicator for the capability of maternity services.

Continuity

The Steering Committee has identified the continuity of care provided by maternity services as an area for development in future reports (box 9.27).

Box 9.27 **Continuity**

There is currently no indicator of the continuity of care provided by maternity services.

Sustainability

The Steering Committee has identified the sustainability of maternity services as an area for development in future reports (box 9.28).

Box 9.28 **Sustainability**

There is currently no indicator of the sustainability of maternity services.

Outputs — efficiency

Recurrent cost per maternity separation

The Steering Committee has identified 'recurrent cost per maternity separation' as an indicator of the efficiency of maternity services in public hospitals (box 9.29).

'Recurrent cost per maternity separation' (for caesarean delivery without complicating diagnosis and for vaginal delivery without complicating diagnosis) is shown in figure 9.23. Data for a number of other maternity related AR-DRGs are shown in table 9A.55. Data are sourced from the NHCDC. As noted in section 9.2, the NHCDC is a voluntary annual collection, the purpose of which is to calculate between-DRG cost weights. The samples are not necessarily representative of the set of hospitals in each jurisdiction.

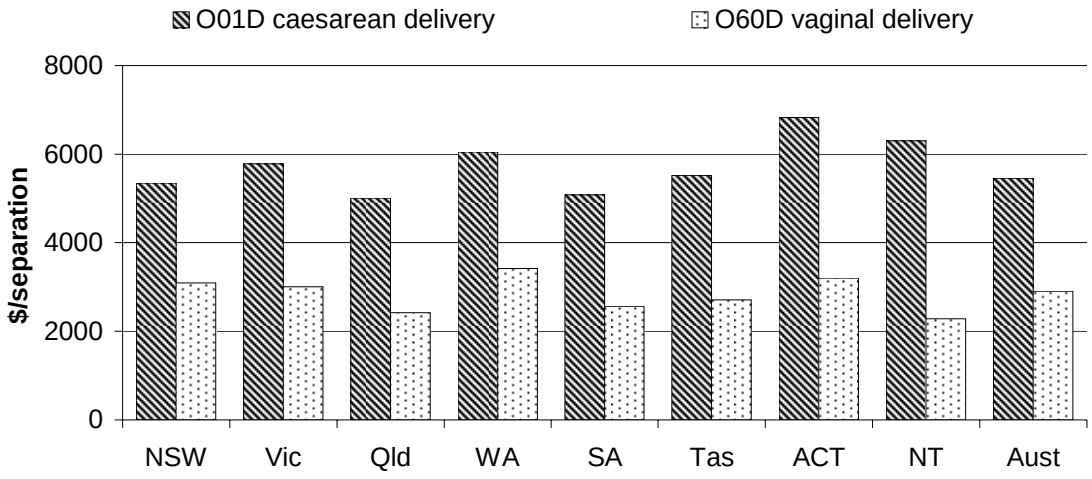
Box 9.29 **Recurrent cost per maternity separation**

The 'recurrent cost per maternity separation' is a proxy indicator of efficiency in treating admitted patients. It is presented for the two AR-DRGs that account for the largest number of maternity patient days: caesarean delivery without complicating diagnosis and vaginal delivery without complicating diagnosis.

Lower 'recurrent costs per maternity separation' may reflect higher efficiency in providing maternity services to admitted patients. This is only likely to be the case however, where the low cost maternity services are provided at equal or superior effectiveness.

Nationally, the 'recurrent cost per maternity separation' for caesarean delivery without complications in public hospitals was $5456 in 2002-03 (figure 9.23). Across jurisdictions, the highest average cost was in the ACT ($6833) and the lowest was in Queensland ($5009). The 'recurrent cost per maternity separation' for vaginal delivery without complications was $2899 nationally in 2002-03. Across jurisdictions, it was highest in WA ($3416) and lowest in the NT ($2283).

Figure 9.23 **Estimated average cost per separation for selected maternity-related AR-DRGs, public hospitals, 2002-03**[a, b, c]



a Includes AR-DRG O01D caesarean delivery without complicating diagnosis and AR-DRG O60D vaginal delivery without complicating diagnosis. **b** Average cost is affected by a number of factors including admission practices, sample size, remoteness and the types of hospital contributing to the collection. Direct comparisons between jurisdictions are difficult because there are differences in hospital costing systems. **c** In accordance with NHCDC methodology, depreciation and some capital costs are included in these data, except for Victoria which does not include depreciation.

Source: DHA 2004a; table 9A.55.

Total cost per maternity separation

The Steering Committee has identified the 'total cost per maternity separation' as an indicator of the efficiency of public hospital maternity services, but no data are available (box 9.30).

Box 9.30 **Total cost per maternity separation**

A method for calculating the capital cost component of the 'total cost per maternity separation' indicator has not yet been determined, so no data can be reported.

Mother's average length of stay

The Steering Committee has identified 'mother's average length of stay in hospital' as an indicator of the efficiency of maternity services in public hospitals (box 9.31).

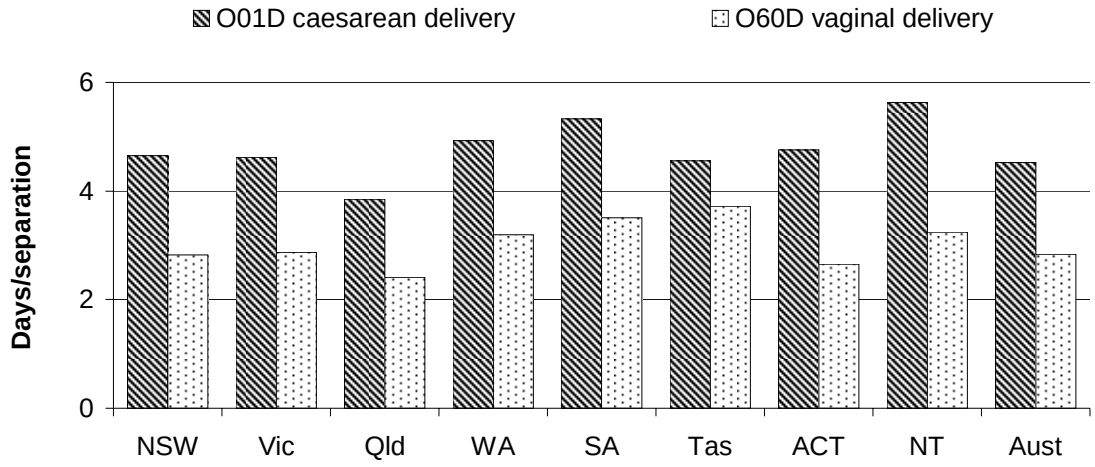
Box 9.31 **Mother's average length of stay**

A 'mother's average length of stay' in hospital is an indicator of efficiency. It is reported for two common maternity AR-DRGs: caesarean delivery without complications and vaginal delivery without complications.

Shorter stays for mothers reduce hospital costs but whether they represent genuine efficiency improvements depends on a number of factors. Shorter stays may, for example, have an adverse effect on the health of some mothers and result in additional costs for in-home care. The indicator is not adjusted for multiple births born vaginally and without complications but requiring a longer stay to manage breastfeeding.

The 'mother's average length of stay' for caesarean delivery without complications was 4.5 days for Australia in 2002-03. The longest average length of stay was in the NT (5.6 days) and the shortest was in Queensland (3.9 days). Nationally, the average length of stay for vaginal delivery without complications in 2002-03 was 2.8 days. The longest average length of stay was in Tasmania (3.7 days) and the shortest was in Queensland (2.4 days) (figure 9.24).

Figure 9.24 **Average length of stay for selected maternity-related AR-DRGs, public hospitals, 2002-03[a, b, c]**



a Includes AR-DRG O01D caesarean delivery without complicating diagnosis and AR-DRG O60D vaginal delivery without complicating diagnosis. **b** Average cost is affected by a number of factors including admission practices, sample size, remoteness and the types of hospital contributing to the collection. Direct comparisons between jurisdictions are difficult because there are differences in hospital costing systems. **c** In accordance with NHCDC methodology, depreciation and some capital costs are included in these data, except for Victoria which does not include depreciation.

Source: DHA 2004a; table 9A.55.

Outcomes

Apgar score

The Steering Committee has identified the 'Apgar score of babies at five minutes after birth' as an indicator of the outcomes of maternity services (box 9.32).

Table 9.28 illustrates the relationship between low birth weight and a low Apgar score. Of those jurisdictions that provided data in 2003, the NT had the highest proportion of babies weighing less than 1500 grams and reporting an Apgar score of 3 or less, five minutes after delivery (23.3 per cent), while Tasmania reported the smallest proportion (5.8 per cent). For babies weighing 1500–1999 grams, the NT reported the highest proportion of babies with an Apgar score of 3 or less (3.6 per cent) and SA reported the lowest (zero). For other birthweights, Apgar scores of 3 or less were relatively rare, and the proportion was fairly similar across all jurisdictions (equal to or less than 1 per cent). In the NT, the rates were considerably higher, at 1.9 per cent for babies of 2000-2499 grams and 0.5 per cent for babies weighing 2500 grams and over.

Box 9.32 **Baby's Apgar score at five minutes**

The Apgar score is a numerical score that indicates a baby's condition shortly after birth. The future health of babies with lower Apgar scores is often poorer than those with higher scores. The management of labour and resuscitation in hospitals can influence Apgar scores.

Apgar scores are based on an assessment of the baby's heart rate, breathing, colour, muscle tone and reflex irritability. Between 0 and 2 points are given for each of these five characteristics, and the total score is between 0 and 10. The Apgar score is routinely assessed at one and five minutes after birth, and subsequently at five minute intervals if it is still low at five minutes (Day *et al.* 1999).

This performance indicator is defined as the number of live births with an Apgar score of 3 or less, at five minutes post-delivery, as a proportion of the total number of live births by specified birth weight categories.

Low Apgar scores (defined as less than 4) are strongly associated with babies' birthweights being low. The management of labour in hospitals does not usually affect birthweights, but can affect the prevalence of low Apgar scores for babies with similar birthweights. Within birthweight categories therefore, Apgar scores may indicate good performance. Factors other than hospital maternity services, however, also influence Apgar scores within birthweight categories — for example antenatal care, multiple births and socioeconomic factors.

Table 9.28 **Live births with an Apgar score of 3 or lower, five minutes post-delivery, public hospitals, 2003**

Birthweight (grams)	*Unit*	*NSW*	*Vic*	*Qld*[a]	*WA*	*SA*	*Tas*	*ACT*	*NT*
Less than 1500	no.	787	539	481	208	191	52	na	47
Low Apgar	%	13.5	19.3	11.0	7.7	12.0	5.8	na	23.3
1500–1999	no.	913	627	492	251	204	66	na	53
Low Apgar	%	0.9	1.8	1.6	1.6	–	1.5	na	3.6
2000–2499	no.	2 596	1 878	1 444	712	534	133	na	210
Low Apgar	%	0.5	0.4	0.3	0.7	1.1	0.8	na	1.9
2500 and over	no.	60 606	40 478	31 667	13 300	11 715	2 901	na	2 539
Low Apgar	%	0.1	0.1	0.2	0.1	0.1	0.2	na	0.5

a Data are preliminary and subject to revision. **na** Not available. **–** Nil or rounded to zero.

Source: State and Territory governments (unpublished); table 9A.50.

Fetal death rate

The Steering Committee has identified the 'fetal death rate' as an indicator of the outcomes of maternity services (box 9.33).

Box 9.33 **Fetal death rate**

Fetal death (stillbirth) is the birth of a child who did not at any time after delivery breathe or show any other evidence of life, such as a heartbeat. Fetal deaths by definition include only infants weighing at least 400 grams or of a gestational age of at least 20 weeks. The rate of fetal deaths is expressed per 1000 total births.

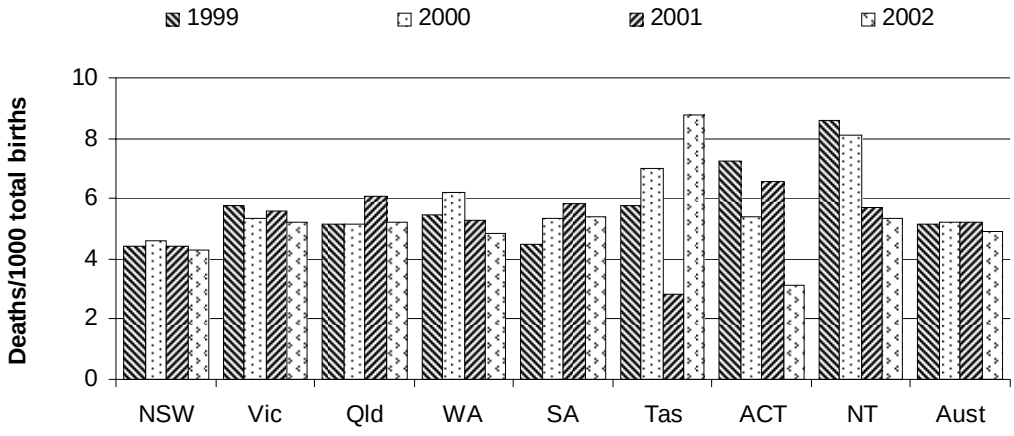
'Fetal death rate' is reported as an indicator because maternity services for admitted patients have some potential to reduce the likelihood of fetal deaths. This potential is limited, however, and other factors (such as the health of mothers and the progress of pregnancy before hospital admission) are also important.

The 'fetal death rate' is calculated as the number of fetal deaths divided by the total number of births (live births and fetal deaths combined), by State or Territory of usual residence of the mother. Low fetal death rates may indicate high quality maternity services. In jurisdictions where the number of fetal deaths is low, small annual fluctuations in the number affect the annual rate of fetal deaths.

Differences in the 'fetal death rate' between jurisdictions are likely to be due to factors outside the control of maternity services for admitted patients. To the extent that the health system influences fetal death rates, the health services that may have an influence include outpatient services, general practice services and maternity services.

In 2002, the national 'fetal death rate' was 4.9 per 1000 births. Across jurisdictions it was highest in Tasmania (8.8 deaths per 1000 births) and lowest in the ACT (3.2 deaths per 1000 births) (figure 9.25). The national 'fetal death rate' for babies of Indigenous mothers in 2002 was 6.6 per 1000 births (table 9A.51).

Figure 9.25 **Fetal death rate[a, b]**



a Statistics relate to the number of deaths registered — not those that occurred — in the years shown. The ABS estimates that about 5–6 per cent of deaths occurring in one year are not registered until the following year or later. These data may differ, therefore, from other published sources (such as AIHW or State and Territory government publications). **b** Rates fluctuate as a result of a low incidence of fetal deaths.

Source: ABS (unpublished); table 9A.51.

Neonatal death rate

The Steering Committee has identified the 'neonatal death rate' as an indicator of the outcomes of maternity services (box 9.34).

Box 9.34 **Neonatal death rate**

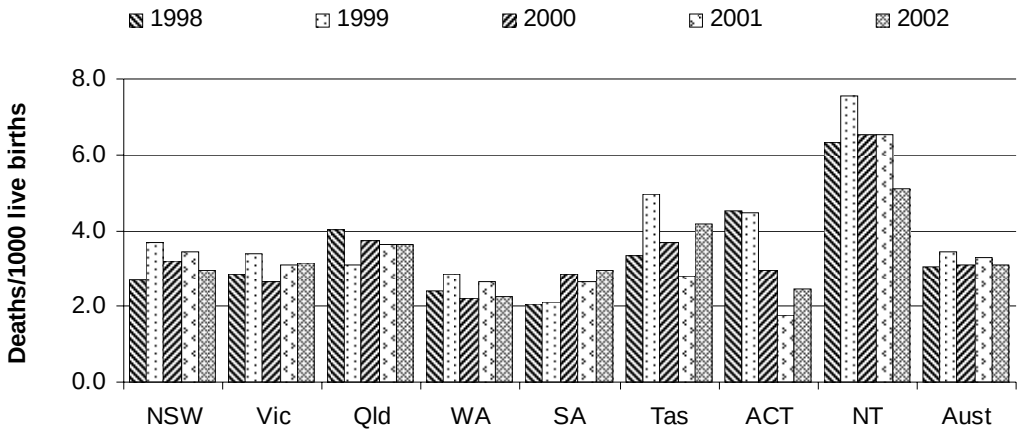
As for fetal deaths, a range of factors contribute to neonatal deaths. The influence of maternity services for admitted patients, however, is greater for neonatal deaths than for fetal deaths, through the management of labour and the care of sick and premature babies.

Neonatal death is the death of a live born infant within 28 days of birth (see section 9.5 for a definition of a live birth). The 'neonatal death rate' is calculated as the number of neonatal deaths divided by the number of live births registered. The rate of neonatal deaths is expressed per 1000 live births, by state or territory in which the mother usually resides. This indicator is reported by the Indigenous status of the mother.

Low 'neonatal death rates' may indicate high quality maternity services. The rate tends to be higher among premature babies, so a lower neonatal death rate may also indicate a lower percentage of pre-term births.

In 2002, the national 'neonatal death rate' was 3.1 deaths per 1000 live births. Across jurisdictions, the rate was highest in the NT (5.1 deaths per 1000 live births) and lowest in WA (2.2 deaths per 1000 live births) (figure 9.26). The national 'neonatal death rate' for babies of Indigenous mothers in 2002 was 4.8 per 1000 births (table 9A.53).

Figure 9.26 **Neonatal death rate[a, b]**



a Statistics relate to the number of deaths registered — not those that occurred — in the years shown. The ABS estimates that about 5–6 per cent of deaths occurring in one year are not registered until the following year or later. These data may differ, therefore, from other published sources (such as AIHW or State and Territory government publications). **b** Annual rates fluctuate as a result of a low incidence of neonatal deaths.

Source: ABS (unpublished); table 9A.53.

Perinatal death rate

The Steering Committee has identified the 'perinatal death rate' as an indicator of the outcomes of maternity services (box 9.35).

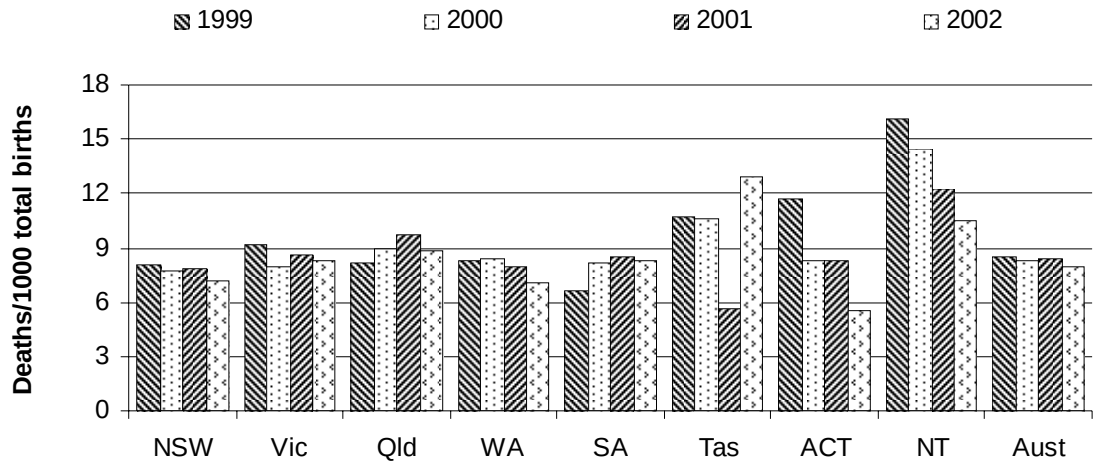
Box 9.35 **Perinatal death rate**

A perinatal death is a fetal or neonatal death (boxes 9.33 and 9.34). The caveats that apply to fetal and neonatal death rates also apply to perinatal death rates.

The 'perinatal death rate' is calculated as the number of perinatal deaths divided by the total number of births (live births registered and fetal deaths combined) in each jurisdiction. It is expressed per 1000 total births. This indicator is reported by the Indigenous status of the mother.

In 2002, the national 'perinatal death rate' was 8.0 deaths per 1000 total births. Across jurisdictions, the rate was highest in Tasmania (12.9 deaths per 1000 total births) and lowest in the ACT (5.6 deaths per 1000 total births) (figure 9.27). The national 'perinatal death rate' for babies of Indigenous mothers was 11.3 deaths per 1000 total births (table 9A.52). Time series data for neonatal, fetal and perinatal death rates are included in table 9A.52.

Figure 9.27 **Perinatal death rate[a, b]**



a Statistics relate to the number of deaths registered — not those that occurred — in the years shown. The ABS estimates that about 5–6 per cent of deaths occurring in one year are not registered until the following year or later. These data may differ, therefore, from other published sources (such as AIHW or State and Territory government publications). **b** Annual rates fluctuate as a result of a low incidence of perinatal deaths.

Source: ABS (unpublished); table 9A.54.

Rate of survival to 28 days of very low birthweight babies

The Steering Committee has identified the 'rate of survival to 28 days of very low birthweight babies' as an indicator of the outcomes of maternity services (box 9.36). No data for this indicator are currently available.

Box 9.36 **Rate of survival to 28 days of very low birthweight babies**

The 'rate of survival to 28 days of very low birthweight babies' is an indicator of maternity services outcomes. It would be reported by hospital type. The Steering Committee has identified this indicator for development and reporting in the future.

9.4 Future directions in performance reporting

Priorities for future reporting on public hospitals and maternity services include:

- improving the comprehensiveness of reporting by filling in gaps in the performance indicator frameworks. Important gaps in reporting for public hospitals include indicators of outcomes, indicators of equity of access to services for special needs groups (particularly Indigenous people), indicators of continuity of care and indicators of sustainability. Gaps in the maternity services

framework include three aspects of quality — responsiveness, capability and continuity — and the effectiveness subdimension of sustainability.

- improving currently reported indicators for public hospitals and maternity services where data are not complete or not directly comparable. There is scope to improve reporting of the quality and access dimensions of the public hospitals framework, and the output indicators for maternity services.

In preparation for the 2006 Report, the Steering Committee will commence a 'stocktake' of the performance indicators reported in the health chapters. This exercise will aim to improve the coordination of performance indicators across the health chapters and to address the remaining gaps in reporting against the Review's performance framework.

Quality indicators for public hospitals

The Steering Committee has previously elucidated its concerns about the paucity of comparable performance information on the quality of care provided by Australian public hospitals. Consequently, the Steering Committee convened a workshop in July 2004, to examine indicators of quality for Australian public hospitals. The workshop was organised jointly by the Steering Committee for the Review and the Australian Council for Safety and Quality in Health Care (ACSQHC). It was supported by the Australian Health Ministers Advisory Council and the National Health Performance Committee. Over 30 health administrators and professionals from around Australia attended and contributed to the discussions.

The aim of the workshop was to consider new performance indicators of public hospital quality for this Report. The Steering Committee will examine a number of options, including those outlined below, for long term development.

Patient satisfaction (or experience) survey

The most popular proposal raised at the workshop was a nationally consistent patient satisfaction (or experience) survey. This would need to augment or replace current local or small scale patient surveys. It would need to be consistent with other clinical and hospital data collection processes and to have the full support of all jurisdictions' health sectors. International examples and research (such as by the World Health Organisation) could provide a model for developing a national patient survey for Australia.

Augmenting hospital accreditation reporting

Workshop participants discussed ways of building on existing hospital accreditation data and processes. This work would extend the accreditation data currently reported in the Review to also discuss 'how' hospitals meet accreditation standards. It would involve reporting, for example, whether hospitals exceed accreditation standards by a large or small margin, or whether they practice 'continuous improvement'. The ACSQHC is examining hospital accreditation processes to explore how safety and quality can be improved through this system.

Hospital safety — adverse events and sentinel events

Workshop participants also discussed options for reporting hospital incident data, including (but not limited to) adverse event data and sentinel event data. In 2004, the AIHW reported the number of separations with external causes for adverse events as a performance indicator of the safety of hospital services (AIHW 2004a). Adverse events are defined as incidents in which harm resulted to a person receiving healthcare. They include infections, falls and other injuries, and medication and medical device problems, some of which may be preventable. The data do not incorporate all adverse events that occurred in hospitals, but represent a selection that have resulted in, or affected, hospital admissions. The data are not yet reported by jurisdiction, and are not comparable over time because recording practices are inconsistent. In addition, there is no adjustment for risk. In 2002-03, there were 209 140 separations with an adverse event (5.1 per 100 separations) in Australian public hospitals (AIHW 2004a).

All Australian health ministers have agreed on a national core set of sentinel events, which are defined as those adverse events that cause serious harm to patients and that have the potential to seriously undermine public confidence in the healthcare system (box 9.37). By the end of 2005, all public hospitals are to report the agreed national core set and contribute to a national report on sentinel events. Victoria is the only State that has reported sentinel events publicly so far. Sentinel events data would be a valuable addition to this Report as an indicator of hospital quality and safety.

Box 9.37 **Agreed national core set of sentinel events**

1. Procedures involving the wrong patient or body part
2. Suicide of a patient in an inpatient unit
3. Retained instruments or other material after surgery requiring re-operation or further surgical procedure
4. Intravascular gas embolism resulting in death or neurological damage
5. Haemolytic blood transfusion reaction resulting from ABO (blood group) incompatibility
6. Medication error leading to the death of a patient reasonably believed to be due to incorrect administration of drugs
7. Maternal death or serious morbidity associated with labour or delivery
8. Infant discharged to wrong family

Source: ACSQHC (2002).

9.5 Definitions of key terms and indicators

Accreditation	Professional recognition awarded to hospitals and other healthcare facilities that meet defined industry standards. Public hospitals may seek accreditation through the ACHS Evaluation and Quality Improvement Program, the Australian Quality Council (now known as Business Excellence Australia), the Quality Improvement Council, the International Organisation for Standardization 9000 Quality Management System or other equivalent programs.
Acute care	Clinical services provided to admitted or non-admitted patients, including managing labour, curing illness or treating injury, performing surgery, relieving symptoms and/or reducing the severity of illness or injury, and performing diagnostic and therapeutic procedures. Most episodes involve a relatively short hospital stay.
Admitted patient	A patient who has undergone a formal admission process in a public hospital to begin an episode of care. Admitted patients may receive acute, sub-acute or non-acute care services.
Allied health (non-admitted)	Occasions of service to non-admitted patients at units/clinics providing treatment/counselling to patients. These include units providing physiotherapy, speech therapy, family planning, dietary advice, optometry and occupational therapy.
Apgar score	Numerical score used to evaluate a baby's condition after birth. The definition of the indicator is the number of babies born with an Apgar score of 3 or lower at 5 minutes post-delivery, as a proportion of the total number of babies born. Excludes fetal deaths in utero before commencement of labour.
AR-DRG	Australian Refined Diagnosis Related Group — a patient classification system that hospitals use to match their patient services (hospital procedures and diagnoses) with their resource needs. AR-DRG versions 4.1 and 4.2 are based on the ICD-10-AM classification.
Average length of stay	The mean length of stay for all patient episodes, calculated by dividing total occupied bed days by total episodes of care.
Caesarean section	Operative birth through an abdominal incision.
Casemix adjusted	Adjustment of data on cases treated to account for the number and type of cases. Cases are sorted by AR-DRG into categories of patients with similar clinical conditions and requiring similar hospital services. Casemix adjustment is an important step to achieving comparable measures of efficiency across hospitals and jurisdictions.
Casemix-adjusted separations	The number of separations adjusted to account for differences across hospitals in the complexity of episodes of care.
Catastrophic	An acute or prolonged illness usually considered to be life threatening or with the threat of serious residual disability. Treatment may be radical and is frequently costly.
Community health services	Health services for individuals and groups delivered in a community setting, rather than via hospitals or private facilities.
Cost of capital	The return foregone on the next best investment, estimated at a rate of 8 per cent of the depreciated replacement value of buildings, equipment and land. Also called the 'opportunity cost' of capital.
Cost per casemix-adjusted separation	Recurrent expenditure multiplied by the inpatient fraction and divided by the total number of casemix-adjusted separations plus estimated private patient medical costs.

Cost per non-admitted occasion of service	Recurrent expenditure divided by the inpatient fraction and divided by the total number of non-admitted occasions of service.
Elective surgery waiting times	The time elapsed for a patient on the elective surgery waiting list, from the date on which he or she was added to the waiting list for a procedure to admission or a designated census date.
Emergency department waiting times to service delivery	The time elapsed for each patient from presentation to the emergency department (that is, the time at which the patient is clerically registered or triaged, whichever occurs earlier) to the commencement of service by a treating medical officer or nurse.
Emergency department waiting times to admission	The time elapsed for each patient from presentation to the emergency department to admission to hospital.
Episiotomy	An obstetrics procedure. A surgical incision into the perineum and vagina to prevent traumatic tearing during delivery.
Fetal death	Delivery of a child who did not at any time after delivery breathe or show any other evidence of life, such as a heartbeat. Excludes infants that weigh less than 400 grams or that are of a gestational age of less than 20 weeks.
Fetal death rate	The number of fetal deaths divided by the total number of births (that is, by live births registered and fetal deaths combined).
General practice	The organisational structure with one or more GPs and other staff such as practice nurses. A general practice provides and supervises healthcare for a 'population' of patients and may include services for specific populations, such as women's health or Indigenous health.
ICD-10-AM	The Australian modification of the International Standard Classification of Diseases and Related Health Problems. This is the current classification of diagnoses and procedures in Australia.
Inpatient fraction	The ratio of inpatient costs to total hospital costs.
Labour cost per casemix-adjusted separations	Salary and wages plus visiting medical officer payments, multiplied by the inpatient fraction, divided by the number of casemix-adjusted separations.
Length of stay	The period from admission to separation less any days spent away from the hospital (leave days).
Live birth	Birth of a child who, after delivery, breathes or shows any other evidence of life, such as a heartbeat. Includes all registered live births regardless of birthweight.
Medicare	Australian Government funding of private medical and optometrical services (under the Medicare Benefits Schedule). Sometimes defined to include other forms of Australian Government funding such as subsidisation of selected pharmaceuticals (under the PBS) and public hospital funding (under the Australian Health Care Agreements), which provides public hospital services free of charge to public patients.
Mortality rate	The number of deaths per 100 000 people.
Neonatal death	Death of a live born infant within 28 days of birth. Defined in Australia as the death of an infant that weighs at least 400 grams or that is of a gestational age of at least 20 weeks.
Neonatal death rate	Neonatal deaths divided by the number of live births registered.

Non-acute episode of care	Clinical services provided to admitted and non-admitted patients, including planned geriatric respite, palliative care, geriatric evaluation and management and services for nursing home type patients. Clinical services delivery by designated psychiatric or psychogeriatric units, designated rehabilitation units and mothercraft services are also considered non-acute.
Non-admitted occasions of service	Clinical services provided by hospitals to non-admitted patients. Services may include emergency department visits, outpatient services (such as pathology, radiology and imaging, and allied health services, including speech therapy and family planning) and other services to non-admitted patients. Hospital non-admitted occasions of service are not yet recorded consistently across states and territories, and relative differences in the complexity of services provided are not yet documented.
Non-admitted patient	A patient who has not undergone a formal admission process, but who may receive care through an emergency department, outpatient or other non-admitted service.
Perinatal death	Fetal death or neonatal death of an infant that weighs at least 400 grams or that is of a gestational age of at least 20 weeks.
Perinatal death rate	Perinatal deaths divided by the total number of births (that is, live births registered and fetal deaths combined).
Perineal laceration (third or fourth degree)	A 'third degree' laceration or rupture during birth (or a tear following episiotomy) involves the anal sphincter, rectovaginal septum and sphincter NOS. A 'fourth degree' laceration, rupture or tear also involves the anal mucosa and rectal mucosa (NCCH 1998).
Perineal status	The state of the perineum following a birth.
Primary care	Essential healthcare based on practical, scientifically sound and socially acceptable methods made universally accessible to individuals and families in the community.
Primipara	Pregnant woman who has had no previous pregnancy resulting in a live birth or a still birth.
Public hospital	A hospital that provides free treatment and accommodation to eligible admitted persons who elect to be treated as public patients. It also provides free services to eligible non-admitted patients and may provide (and charge for) treatment and accommodation services to private patients. Charges to non-admitted patients and admitted patients on discharge may be levied in accordance with the Australian Health Care Agreements (for example, aids and appliances).
Puerperium	The period or state of confinement after labour.
Real expenditure	Actual expenditure adjusted for changes in prices.
Relative stay index	The actual number of acute care patient days divided by the expected number of acute care patient days, adjusted for casemix. Includes acute care separations only. Excludes: separations for renal dialysis and chemotherapy (because they are overwhelmingly same day); AR-DRGs with a length of stay component in the definition; rehabilitation AR-DRGs; error AR-DRGs 960Z, 961Z, 962Z and 963Z; separations of patients who died or were transferred within two days of admission; and separations with a length of stay greater than 120 days.
Same day patients	A patient whose admission date is the same as the separation date.

Sentinel events	Adverse events that cause serious harm to patients and that have the potential to undermine public confidence in the healthcare system.
Separation	A total hospital stay (from admission to discharge, transfer or death) or a portion of a hospital stay beginning or ending in a change in the type of care for an admitted patient (for example, from acute to rehabilitation). Includes admitted patients who receive same day procedures (for example, renal dialysis).
Separation rate	Hospital separations per 1000 people or 100 000 people.
Selected primipara	Primipara with no previous deliveries, aged 25–29 years, singleton, vertex presentation and gestation of 37–41 weeks (inclusive).
Sub-acute and non-acute care	Clinical services provided to patients suffering from chronic illnesses or recovering from such illnesses. Services include rehabilitation, planned geriatric care, palliative care, geriatric care evaluation and management, and services for nursing home type patients. Clinical services delivered by designated psychogeriatric units, designated rehabilitation units and mothercraft services are considered non-acute.
Surgical site infection rate for selected surgical procedures	The number of surgical site infections for a selected procedure (hip and knee prosthesis, lower segment caesarean section or abdominal hysterectomy) performed during the surveillance period divided by the total number of the selected procedure performed during the surveillance period.
Triage category	The urgency of the patient's need for medical and nursing care: category 1 — resuscitation (immediate within seconds) category 2 — emergency (within 10 minutes) category 3 — urgent (within 30 minutes) category 4 — semi-urgent (within 60 minutes) category 5 — non-urgent (within 120 minutes).
Unplanned hospital re-admission	An unexpected hospital admission for treatment of: the same condition for which the patient was previously hospitalised; a condition related to one for which the patient was previously hospitalised; or a complication of the condition for which the patient was previously hospitalised.
Unplanned hospital re-admission rate	The number of unplanned re-admissions to the same hospital within 28 days of separation, during the time period under study, divided by the total number of separations (excluding deaths) for the same time period, including day stay patients.
Urgency category for elective surgery	Category 1 patients — admission is desirable within 30 days for a condition that has the potential to deteriorate quickly to the point that it may become an emergency. Category 2 patients — admission is desirable within 90 days for a condition that is causing some pain, dysfunction or disability, but that is not likely to deteriorate quickly or become an emergency. Category 3 patients — admission at some time in the future is acceptable for a condition causing minimal or no pain, dysfunction or disability, that is unlikely to deteriorate quickly and that does not have the potential to become an emergency.

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